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English Translation of the U.S.S.R. Monthly Journal VOPROSY EKONOMIKI

IN THIS ISSUE

Realization of the Leninist Ideas of the Upbuilding of Communism

Current Problems of Soviet Economic Science

Electrification of the National Economy and Increase in the Productivity of Social Labor

Technical Progress and Improvement in Systems of Wage Payments

Some Problems in the Development of the Catering Industry During the Seven-Year Plan

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Contemporary Bourgeois and Reformist Theories of Inflation

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L. Leontyev:

Realization of the Leninist Ideas of the Upbuilding of Communism

The years in which V. I. Lenin lived and worked are re-creating farther and farther into the past. Time passes but the light shed by Lenin's ideas not only does not diminish but becomes clearer. This is quite logical. After all, Lenin was the successor and continuer of the ideas of Marx and Engels, who analyzed the processes of development of human society by the powerful searchlight of scientific knowledge. Marxism made it possible not only to explain the past of mankind but to foresee its path into the future. And the revolutionary teachings on the development of society today and in the future are deathless.

Life has cast bitter scorn upon the numerous prophets of the bourgeoisie, from optimists of the type of Bentham and Bastiat to pessimists of the type of Nietzsche and Spengler. Both their assertions that everything is getting better in capitalist society, this best of all conceivable worlds, and their darkling predictions of the inevitability of the downfall of all human civilization turned out to be pure hogwash. Capitalism is doomed, of this there is no doubt. However, the decline of capitalism, and its revolutionary replacement by socialism, not only do not mean the end of civilization, but on the other hand signify a new and higher level in the development of all the material and spiritual culture of mankind.

Marxism decisively rejects unfounded prophecies such as seeking for the future in tea leaves. At the same time, it opened the possibility of scientific forecasting of the course of human society, for the first time in human history. Such forecasting is based on a precise scientific cognition of the past and the present, and is inherent in Marxism because of its active and positive nature. Marxism is not a dogma, but a guide to action, and therefore cannot limit itself solely to explanation of the past and the present, but, in the fine phrase of Lenin, provides a solid soil for fearless prediction of the future and bold practical activity directed toward realization of these objectives.

By his generalization of exceedingly rich practical experience in the struggle for socialism, V. I. Lenin made a gigantic contribution to the treasure-house of Marxist ideas. Lenin's great cause is continued by the Communist Party of the Soviet Union he created, and by the fraternal Marxist-Leninist Parties of all countries. Creative Marxism-Leninism lives on in their activity, resolutions, and analysis of the constantly-changing historical reality.

Time has provided convincing support for the truth of Marxist-Leninist teachings, which are of significance in the history of the world itself. At each step it takes, history provides new confirmations of the theory of Marxism-Leninism. And as the ladder of historical progress is ascended, each new step reveals more widely those truly unfounded perspectives which the great teachers of the working class had predicted with such genius.

The historical experience of the upbuilding of socialism in our country and in the other countries of the socialist camp, generalized in the resolutions of the Communist Party of the Soviet Union and the fraternal Marxist-Leninist

parties, has vastly enriched scientific communism. The teachings on the communist social formation, which the founders of Marxism were able to provide only in broad outline, have today been developed on the basis of the multifaceted creative activity of millions of people. The development of socialist society in the direction of the higher phase of communism is today understood in incomparably more concrete form. The horizons of the future are today opening before our country with unprecedented scope at this most important historical Rubicon at the beginning of its existence.

The Soviet Union, heading the brotherly family of socialist countries of Europe and Asia, has entered the period of all-out upbuilding of communist society, as the result of the great triumphs of socialism in all fields of social life. A new page has been opened not only in the history of the upbuilding of socialism, but in the history of socialist ideas. The once far-distant objectives and goals have now become part of our daily life, have taken on the form of precise numerical calculations and objectives, and of tasks for the years immediately ahead, worked out in full detail.

The 21st Congress of the Communist Party of the Soviet Union has developed before the entire world a grandiose program of the upbuilding of communism in the USSR, and of a new mighty upsurge of the economy, culture and material well-being of the people, having no equal in history in terms of scale. "The seven-year plan of development of the national economy of the USSR is a concrete embodiment of the Leninist general line of the Party at the present stage of development," reads the resolution of the 21st Congress of the Party. The target figures of this plan, and the stupendous objectives outlined by the 21st Congress of the Communist Party of the Soviet Union give embodiment to Lenin's behests, to Lenin's teachings in communism.

The period of all-out upbuilding of communism in our country, like all the preceding periods of development of socialist society, confirms the great strength and vitality of Marxism-Leninism. This teaching will serve unfailingly as a reliable compass on the as yet unexplored roads to the creation of new forms of society. "The historical triumphs of the countries of socialism," stated Comrade N. S. Khrushchev in his report at the 21st Congress of the Communist Party, "embody the great revolutionizing force of the ideas of Marxism-Leninism, which illuminate the road to peace, democracy and progress, and to a bright future for all of mankind." At the same time, the Marxist-Leninist teachings on socialism and communism are themselves enriched in the course of the steady movement of the Soviet people and the peoples of the other lands of the world system of socialism ahead. The report by Comrade N. S. Khrushchev on the seven-year plan and the resolutions of the 21st Congress of the Communist Party of the Soviet Union were an outstanding contribution to the Marxist-Leninist theory. In these documents, a generalization of rich practical experience serves as the basis for a profound elaboration of the most important theoretical problems of

transition from socialism to communism. These documents presented a concretization and further development of the brilliant Leninist ideas of the movement of society to the higher phase of communism. Employing the great creative force of Marxism-Leninism, the 21st Congress of the Communist Party of the Soviet Union dealt a new and fatal blow to revisionism, the major danger in the international Communist movement at the present time, and also to dogmatism, which is revisionism inside out.

As early as the first period of the upbuilding of socialism, when a decisive struggle between the young forces of socialism and the forces of the overthrown but as yet dangerous capitalism was under way, V. I. Lenin taught that we have "all that is necessary for the upbuilding of a complete socialist society." In developing the plan for gradual realization of a socialist transformation of the countryside on the foundations of cooperation, he wrote "This is not yet the upbuilding of a socialist society, but this is all that is required and necessary to perform that upbuilding." (1)

In carrying out Lenin's plan for the upbuilding of socialism, the Communist Party led the Soviet people to a complete victory of socialism in our country. The struggle for socialism took place in a condition of hostile capitalist encirclement, which created a constant threat of armed attack on the Soviet land. However, having won complete victory for socialism, the Soviet people could not deem it as final. The USSR remained the world's one socialist country. Under these conditions, it could not deem itself fully guaranteed against military intervention and the danger of forcible restoration of capitalism from without, by the forces of international imperialism.

Now, the situation in the world has changed fundamentally. Two world-wide systems of society exist on our planet — the world system of capitalism, which is outliving its day, and the world system of socialism, which is full of life, constantly growing and becoming stronger, and is winning the sympathies of the working people of all countries. Of course, today too, the Soviet Union, like any other socialist country, is not guaranteed against possible aggression from the imperialist countries. However, the ratio of real forces in the world is today such that the great Soviet power is in a position to throw back any attack by any possible enemy.

"Today, the world knows no forces," said Comrade N. S. Khrushchev, "capable of restoring capitalism in our country and of crushing the socialist camp. Socialism has triumphed in the USSR not only completely, but finally. This fact, that the question as to the upbuilding of socialism in one country and its complete and final triumph has been solved by the world-wide historical course of social development, is the most tremendous triumph of the ideas of Leninism, and a brilliant demonstration of their insuperable vitality. Therefore, one can only be amazed at the ignorance often displayed by bourgeois scientists when they undertake to offer judgments about socialism. Thus, in textbooks on political economy, one of the most widely-employed volumes for students of the so-called "free world," the American economist Paul Samuelson asserts that, after the October revolution, "the Soviet leaders at first had no plan to guide them. The essence of the matter is that Marx limited himself to demonstrating the weak sides of capitalism."

The author of this forlorn slander does not know that even before the great October socialist revolution, our Communist Party had a scientifically-founded program for the upbuilding of socialism and communism — the brilliant Leninist strategic plan for solution of the most complex problems of the creation of a new and higher social order.

This plan became the guideline in our titanic work of transformation. The Leninist program of the upbuilding of socialism and communism has been in the process of being carried out for more than 40 years, and has scored successes that induce exhilaration on the part of honest men the world over.

The scientific difference between socialism and communism, as V. I. Lenin observed, had been clarified by Marx: "Marx, not descending to utopias, defined precisely what it is now possible to determine with respect to this future time, to wit, 'the difference between the lower and higher phases (stages, steps) of communist society'." (2) These lines were written in August-September, 1917. The word "now," underlined by V. I. Lenin, meant: until the triumph of the socialist revolution. In creatively developing the teachings of Marx, V. I. Lenin spoke more than once, after the triumph of the socialist revolution in our country, of the relationship between the two phases of communism, basing himself, in these predictions, on the practical experience of the first years of Soviet power. Under the most difficult conditions, he centered the efforts of the Party and the people on overcoming unprecedented destruction, and opened the perspective of a further movement of society from socialism to communism. Lenin's eagle eyes spotted every granule of the future, even the most far-off years, and cultivated every young shoot of what was new and communist.

Even prior to the great October socialist revolution, V. I. Lenin emphasized that mankind is capable of proceeding from capitalism directly only to socialism, with its principle of distribution in accordance with labor, and that "socialism must inevitably grow into communism, on the banner of which stands written 'From each according to his abilities, to each according to his needs'." (3)

In his speech on revision of the program and change in the name of the Party at the 7th Congress of the Russian Communist Party of Bolsheviks, V. I. Lenin stated that "In undertaking the socialist transformation we must have a clear picture of the objective toward which these transformations are ultimately directed, to wit, the objective of the creation of communist society, which would mean not limiting ourselves solely to expropriation of the factories, plants, the land and means of production, not a limitation merely to strict accounting and control over production and redistribution of products, but one that proceeds further to realization of the principle 'From each according to his abilities, to each according to his needs'."

As V. I. Lenin explained it, Marx's theory is above all the applicable theory of development — in its most consistent, complete, thought-out and content-rich form — to modern capitalism. Lenin noted that Marx posed the problem of the future development of the communism yet to be on the basis that it would develop out of capitalism, and would be the result of the effects of a social force given birth to by capitalism. Therefore, Lenin emphasized that Marx had not had the slightest tendency to build utopias, or vainly to guess that which was unguessable. "Marx poses the problem of communism," wrote Lenin, "as a natural scientist would pose the problem of development of a new, let us say, biological variety, once we know that it developed in a specific way and is changing in a specific direction." (5)

Here we see set forth, in clear and exemplary fashion, the idea of the objective regularity of the development of society on the road to communism. Both the revolutionary replacement of capitalism by socialism, and the further progress of socialist society, and its transformation into communist society will occur not by the arbitrary will of

men, but as a result of the operation of the objective laws of social development.

This Leninist idea is given a new and rich content in the present stage of development of Soviet society. The report by Comrade N. S. Khrushchev at the 21st Congress of the Party provides a further elaboration of the question of the regular nature of the steady movement of society to communism, and provides a foundation for the premise that the transition from socialism to communism is a regular historical process which cannot arbitrarily be interfered with or avoided. One cannot leap to communism directly from capitalism and avoid the socialist stage of development. It is impossible, for example, to advance prematurely the distribution in accordance with needs, so long as the economic conditions for this have not yet been created, i.e., so long as an abundance of material goods has not been attained, and people have not been readied to live and work in communist fashion.

At the same time, the gradual transition to communism must not be regarded as some long drawn-out process. On the contrary, the present period in the development of our country is characterized by rapid growth of its economy and culture, and by a rapid hammering out of all the conditions for communism. The creative activity and consciousness of millions of builders of communist society make it possible to accelerate the regular process of the growing of socialism into communism. The key to this acceleration is provided by the significant development of material production, and the rapid growth of the forces of production.

A foundation for the movement from socialist society to communist was always seen by the classic writers of Marxism-Leninism in the rapid and all-round development of the productive forces. They saw in the blooming of the forces of production of socialist society the decisive prerequisites and the most important conditions of the growing over from socialism to communism. As far back as the Communist Manifesto, it was emphasized that the working class, after taking power, utilizes its political power so as to take from the bourgeoisie, step by step, all its capital, to concentrate all the means of production in the hands of the government and "to increase the sum of the productive forces as rapidly as possible." (6)

This proposition was later given a foundation in a number of other works by Marx and Engels, primarily the Critique of the Gotha Program and Anti-Duhring. Marx identifies the higher phase of communism thus: "In the higher phase of communist society, after the subjection of man to the division of labor, which enslaves man, has disappeared; after the contradiction between mental and physical labor disappears along with the former; after labor ceases to be merely a means of livelihood, and becomes the first necessity of life; after the productive forces have also increased the all-round development of the individual, and all the streams of cooperative wealth flow more abundantly — only then can the narrow horizon of bourgeois right be fully left behind and society inscribe on its banners: From each according to his abilities, to each according to his needs." (7)

In presenting this description in his work State and Revolution, V. I. Lenin gave particular emphasis to the decisive significance of the gigantic growth of the forces of production for the entire process of maturing of the prerequisites of communism. After the overthrow of capitalism, and substitution of social property for private property in the means of production, a hitherto unimaginable scope for the development of the productive forces opens up. "And, seeing how incredibly capitalism inhibits this development even today," wrote Lenin, "and how much progress could

be made on the basis of the technology attained today, we are justified in stating with the most complete confidence that the expropriation of the capitalists would inevitably result in a most gigantic development of the productive forces of human society." (8) V. I. Lenin not only provided a rationale for the possibility and inevitability of a vast acceleration of the development of the productive forces as the result of transition from capitalism to socialism, but rendered concrete the problem of creation of this decisive prerequisite for communism in terms of the historical conditions obtaining in our country. The country where the socialist revolution triumphed for the first time in history was Russia, which lagged significantly behind the most advanced capitalist countries in terms of economic technology. At a time when this first break in the world front of imperialism by the socialist revolution had only just come on the immediate order of business, V. I. Lenin advanced a truly all-embracing perspective: first to establish the power of the working class, and then to move ahead to catch up to the industrially developed countries.

This idea of Lenin appeared unreal and even fantastic to people with limited, bourgeois perspectives. Among them were people who called themselves socialists. But the Communist Party decisively accepted the Leninist idea, explained to the broad masses of the people the essence of the fundamental economic problem of the USSR, and at various stages in history found all the resources required to struggle successfully for this decision. The Soviet Union was transformed into a most powerful industrial country with a highly-mechanized agriculture, in an unprecedentedly brief historical period. The distance separating our country from the United States in the sphere of economic development has diminished so greatly that today it is clear that the time when the final solution of the fundamental economic problem of the USSR will be attained is not far off. The magnificent program of all-out upbuilding of communist society is directed at creating the foundation for communism in material technology, to the practical solution at rapid rates of the major economic objective of the USSR, to the realization of the gigantic leap in the development of the productive forces of the country by an ever more complete and all-sided utilization of the decisive advantages of the socialist system. The fundamental problem of the present seven-year plan is the problem of maximum gaining of time in the peaceful economic competition between socialism and capitalism.

The basis for the victories won in the economic competition between socialism and capitalism was the high rate of growth of the Soviet economy, which is several times greater than the rates of growth of the capitalist economy. This made it possible for our country to reduce the distance separating it from the most economically-developed countries of capitalism rapidly. The high rates of growth of industrial and agricultural production will remain, in time to come, the key to complete solution of the fundamental economic problem of the USSR. It is on this that the calculations permitting establishment of the time periods within which our country will emerge in first place in the world both in absolute volume of production and in production per head of population are based.

Basing ourselves on the experience of the past, it can be asserted that the industrial production of the United States will increase by about 2% per year in the years immediately ahead. At the same time there can be no doubt that the average annual increase in industrial production of 8.6% set for the USSR in the seven-year plan will not only be met but exceeded. Let us remember that in 1958 the actual increase in industrial production of the USSR was 10%, as

against a planned objective of 7.6%.

The average annual increase in production, expressed in percentage, is a most important index of the advantages of socialism over capitalism from the point of view of the economic competition of the two systems. This new stage in development is characterized not only by the fact that the Soviet Union exceeds the United States in rates of growth of production, but by the fact that the USSR will pass the USA in the absolute annual rate of increase of the most important types of production. This is demonstrated most clearly by the increase in the scale of economic development of our country, which is most important for judgment as to how the enormous acceleration of progress under conditions of socialism, foreseen by Lenin, is being realized.

Data on the volume of capital investments will give an adequate concept of this acceleration. During the seven-year plan, they will be approximately equal to the corresponding figure for the total previous existence of the Soviet government. The national income of the USSR during the seven-year plan will equal the total national income of the USSR during the preceding 30 years.

The rise in the production of pig iron during the seven-year plan will be 25 to 30 million tons, that of steel 31 to 36 million tons, and that of rolled steel 22 to 27 million tons. Recovery of petroleum will rise by 127 million tons during this period. Production of electric power will more than double: the seven-year plan envisages an increase of 287 billion kilowatt hours in production of electric power (233 billion kilowatt hours were produced in 1958).

During the seven-year plan, the volume of housing construction will be 650-660 million square meters, while during the 40 years of Soviet rule, government and cooperative organizations, and the urban population, built and restored homes with a total area of 507 million square meters.

These, and other data, provide clear evidence as to how Lenin's scientific forecasts of enormous acceleration of economic growth under socialism are being carried into life.

The steady advance of society from socialism to communism assumes ever more complete realization due to utilization of the advantages of the socialist order. V. I. Lenin taught that, in every socialist revolution, after expropriation of the expropriators, the next thing on the order of business is "creation of a social system higher than that of capitalism, to wit: increasing the productivity of labor, and in connection therewith (and toward this end) improving its organization." (9)

Labor productivity is the most important and central factor required for the triumph of the new social order: this thought was put forth repeatedly by V. I. Lenin. In the spring of 1919, in his "rough draft of the Party program," Lenin wrote "The increase in the productivity of labor is one of the most fundamental problems, as final transition to communism is impossible without it." (10) One of the most important conditions of the struggle for high productivity of social labor was seen by Lenin to be economic operation of the national economy, the ability to keep track of money, able and highly efficient utilization of resources of living labor and of material resources available to socialist society. A rise in the productivity of social labor is a generalizing index making possible judgment as to the degree of realization of the vast advantages enjoyed by socialism over capitalism. This index reflects the rates of technical progress in all branches of the national economy, and the scale of the saving of concrete and abstract labor attained, as well as the victories in the struggle with unbusinesslike behavior and extravagant, unnecessary expenditures, with cutting the costs of management, etc.

The Communist Party of our country has always regarded a rise in the productivity of social labor and the struggle for economy as fundamental problems of the upbuilding of the economy, and has explained that a systematic rise in the productivity of social labor is the basic source of expanded socialist reproduction and accumulation, and the foundation of a steady rise in the living standard of the people. In 1958, labor productivity in our industry was about ten times as high as in 1913, and about 2.6 times as high as in 1940. During the period of all-out upbuilding of communism, an increase in the productivity of social labor is a most important prerequisite for the creation of the abundance of material goods needed for conversion to the communist principle of distribution in accordance with needs. The seven-year plan envisages high rates of increase of labor productivity in industry, in construction, and in agriculture. In 1965, increase in labor productivity will yield 3/4 of the growth in industrial production.

The rapid rise in the productivity of social labor acquires particular significance at the present, decisive stage in the economic competition between socialism and capitalism. The enormous increase in social wealth required for the triumph of communism is unthinkable without the world's highest productivity of social labor. The spread between indices of labor productivity in industry of our country and the USA has dropped by between 250% and 350% from the situation as it was in 1913. There can be no doubt that our country will overtake the USA in the years immediately ahead in the level of labor productivity, and will then proceed to pass that level.

"The problem today lies," emphasized Comrade N. S. Khrushchev in his report to the 21st Congress of the CPSU, "in attaining a superiority for the socialist system over the capitalist system in world production, to overtake the most advanced capitalist countries in the productivity of social labor, in the production of goods per head of population, and to assure the world's highest living standard."

A rise in labor productivity, as was taught by V. I. Lenin, requires, in the first place, guaranteeing the material foundations of large-scale industry, the development of the production of fuel, iron, the manufacture of machinery, and the output of the chemical industry. Further, the conditions required for increasing labor productivity included, according to Lenin, a rise in the education and culture of the masses of the population, in the discipline of the working people, the ability to work, and improvement of the organization of labor.

These precepts of Lenin are being carried into life by us, ever more completely. A powerful material and technological foundation for socialism has been created in an unprecedentedly brief period, with unswerving adherence to a policy of priority growth for heavy industry, the production of the means of production. A profound cultural revolution has been carried out resulting in a tremendous rise in the level of education of the masses of the population, and an unprecedented flourishing of science and uplift of culture have been attained. The triumphs of the Soviet Union in the field of training of highly-skilled personnel for all branches of the national economy, and the outstanding achievements of Soviet science have found bright realization in the launching of the world's first artificial satellites and the world's first cosmic rocket, in the creation of atomic power plants, and in a number of other items demonstrating to the entire world the inexhaustible possibilities of the socialist system. Today, the grandiose objective of the upbuilding of the foundation for communism in material technology, the major material prerequisite for communism, has been posed. Solution of this

problem requires an even further rise in science and engineering, increase in the skills of the working class, and flourishing of culture.

In speaking of the foundation for communism in material technology, V. I. Lenin particularly emphasized the significance of electrification. "Electrification, on the foundation of the Soviet system," he said, "will create the final triumph for the foundations of communism in our country, the foundations of a cultured life without exploiters, without capitalists, without landlords, and without merchants." (11) Everyone knows Lenin's famous formula: Communism is Soviet power plus the electrification of the entire country. Lenin's brilliant instructions on electrification of the USSR are being unswervingly realized by the Communist Party. The triumphs scored in this direction may be judged by the following data: the amount of electricity produced in pre-revolutionary Russia per year is today produced in our country every three days.

The present period of all-out upbuilding of communism marks, as has been observed at the 21st Congress of the CPSU, a decisive stage in realization of the Leninist idea of the all-out electrification of the country.

The rates of increase in electric power production during the seven-year plan significantly exceed the rates of increase in industry as a whole: while the growth in the gross production of all industry is to be 80%, the production of electric power will rise by 110-120%. The fact that the consumption of electrical power for purposes of production in industry, agriculture and railway transport (in connection with the conversion of the great bulk of haulage to electric traction) will rise at a particularly great rate, is of special significance. The amount of electricity available per worker in industry will almost double. The seven-year plan envisages favored construction of thermal electric power plants using the cheapest types of fuel — natural gas, heavy oil and cheap coals. The further combination of electric power plants into huge systems has, as its objective, the creation of a single power system first for the European portion of the Soviet Union, and then for the country as a whole.

In order to build the foundations for communism in material technology, high rates of technological progress are required. All-round mechanization and automation of the processes of production are the major devices involved herein. The socialist economy has now attained so high a level of technical development that it is possible successfully to solve the tasks of completion of complex mechanization in industry, in agriculture, in construction, in transport, in loading and unloading, and in civic affairs. At the same time, there is a rapid increase in automation of production, and in the utilization of the most advanced achievements of science and technology. The accelerated development of the chemical industry is one of the most promising trends in technological progress and opens truly unbounded possibilities. The seven-year plan envisages realization of the greatest changes in the structure of production, the purpose of which is to assure enormous economy of means and thereby to gain time in the economic competition with capitalism. This pertains primarily to a fundamental improvement in the country's fuel balance by means of a sharp increase in the share of natural gas and petroleum, priority construction of large thermal electric power plants requiring considerably smaller unit capital investments as compared to hydroelectric plants, and accelerated introduction into the economy of the inexhaustible natural riches of the Eastern districts of the USSR.

V. I. Lenin believed the creation of a type of organization of labor superior to that existing under capitalism to be an

essential condition for achievement of high labor productivity. The problem of a socialist organization of social labor is of theoretical and practical interest for an understanding of the process of gradual transition from socialism to communism as a whole, and of the direction and methods of improving labor productivity in particular and in detail.

In describing the socialist organization of social labor, V. I. Lenin proceeded from the proposition that socialism would signify a great replacement of involuntary labor on the behalf of exploiters, which had predominated for centuries and millennia, by work for oneself and for the good of all the society, and moreover, work resting upon all the triumphs of the latest in technology and culture. It is this fundamental change in the role of labor that determines the new type of organization thereof, inherent in socialism. In pointing out that each social system has a corresponding labor discipline, and that a serf system of organization of social labor rested on the discipline of the rod, while the capitalist system rests on the discipline of hunger, Lenin wrote, "The communist organization of social labor, the first step toward which is socialism, will go farther, the more it will rest upon the free and conscious discipline of the working people themselves, who had overthrown the yoke both of the landlords and the capitalists." (12) V. I. Lenin foresaw that the creation of a communist organization of social labor represents an undertaking of gigantic scope, the solution of which would take long periods of time. The free and conscious discipline of the very working people who had overthrown the exploiters is the result of a stubborn and systematic struggle for a fundamental remaking of social relationships, and for a remaking of habits.

As new productive forces were created, and as the steady growth of the economic might of the Soviet country continued, new relationships among people in the process of production, new forms of social connections, new methods of attracting people to labor have developed and become perfected. Lenin's prophecy to the effect that "each new social order demands new relationships between people, and a new discipline" (13) has found its realization in life, in Soviet actuality. As the result of the creative activity of the masses of the people, led by the Communist Party, our country, as is noted in the resolutions of the 21st Congress of the Communist Party, has seen "the development of new and hitherto unknown laws of social development, new standards of relationships among human beings."

Among the new principles given breath by the socialist system are planned and proportional development of the national economy, continuous and rapid growth in production, with no declines or crises. These principles have made possible the planning of the national economy, determination of the direction of its development, realization of a steady increase in volumes of production, rational distribution of the forces of production, and the carrying out of specialization and cooperation on a large scale, on the foundation of socialist principles.

With the liquidation of the exploitation of man by man, and with the establishment of the complete dominance of socialist social property in the means of production, the relationships among human beings have come to be founded upon mutual aid and the cooperation of free and equal members of society, deeply interested in the development of the economy and culture, knowing that this development rests entirely upon the results of their labor.

"In place of competition, private enterprise and bestial exploitation of man by man," it is stated in the decisions of the 21st Congress of the CPSU, "new and truly humanist

relationships among the people of socialist society have arisen — relationships of comradely competition and cooperation, mutual support in labor, relationships providing scope for the development of creative initiative, activity, talents and the abilities of the broadest masses of the people.”

The development of the new forms of social relations among people is a complex and multi-sided process embracing various spheres of social and personal life. Lenin believed the development of new forms of methods of involving people in labor to be the most important factor in this process.

Each social system has its particular methods of stimulating people to work and of involving them in productive activity. Socialism has destroyed those methods of stimulation to work which are characteristic of capitalism, “the threat of hunger for the majority and the greed for profit for the minority.” Life itself, the objective course of history poses the problem of developing new and hitherto non-existent methods of involving people in work.

The methods and devices of involving people in labor employed by capitalism were developed by it over the course of many decades and even centuries. It is natural that the creation of methods of involving people in labor under a new society, socialism, is not an easy matter, and requires much, and thoughtful work. The Communist Party invariably bases itself upon Lenin’s wise instructions in its pursuit of this work. These instructions reveal the significance and content of the economic law of distribution in accordance with labor, which is one of the objective economic laws of the socialist system of production. Lenin elaborated and enriched the familiar premise of Marx and Engels to the effect that the principle of socialism which must not be forgotten is “from each according to his ability, to each according to his work.”

V. I. Lenin repeatedly emphasized that a most important condition for the successful upbuilding of communism is accounting and control, by society, over the standard of labor and the standard of consumption by each working individual. Socialism, he taught, presupposes “social labor under conditions of the strictest accounting, control and supervision by the organized vanguard, the advanced portion of the working class; both the standard of labor and its reward have to be determined.” (14) Lenin noted that it would be wrong to counterpose each worker’s material interests and the results of his own work to those powerful moral stimuli to labor that are born, develop and grow strong under socialism. On the contrary, a harmonious coordination of material and moral stimuli to labor is a characteristic of the socialist organization of social labor.

The exceedingly rich experience of the Soviet Union and the other socialist countries has clearly demonstrated that the most complete realization of the economic law of distribution in accordance with labor, the principle of payment to each worker in accordance with the quantity and quality of work that he has expended for the welfare of society, is a powerful motive force in social progress under socialism. In the resolution of the 21st Congress of the Communist Party of the Soviet Union it is emphasized that, in the period of all-out upbuilding of communist society, the following principle “from each according to his ability, to each according to his work,” remains at the foundation of the distribution of material wealth.

“Distribution in accordance with labor,” it is stated in the decisions of the 21st Congress of the Party, “assures that people will have a material interest in the results of production, stimulates growth of labor productivity, increase in the skills of workers, perfection of technology of

production. It also has an important educational role to play, teaches socialist discipline, makes labor universal and obligatory.”

The universality and obligatory nature of labor — the most significant characteristics of the socialist organization of labor — are retained during the higher phase of communism as well. The universality and obligatory nature of labor is one of the sources of the immeasurable superiority of socialism over capitalism. One can only regret that this most important element in the socialist organization of labor is given so little attention in the works of Soviet scholars.

By stimulating improvement in the skills of personnel, distribution in accordance with labor facilitates an increase in the level of their general and technological knowledge, and this results in destroying differences between physical and mental labor. Payment of labor in accordance with its quantity and quality corresponds to reinforcement of socialist discipline and the development of socialist competition, and is of first-class significance for the process of transforming labor into a primary vital necessity for man.

The transition to communist distribution in accordance with need will be realized on the basis of the most complete application of the economic law of distribution in accordance with labor during the socialist stage of development of society. The necessary conditions for realization of the principle of distribution in accordance with labor, as well as of other characteristics of the higher phase of communism are created, and mature dialectically: not by way of weakening of the socialist principle in accordance with labor, but contrariwise, via the fullest development and reinforcement thereof.

On the basis of that which Marx and Lenin have stated as to the residues of “bourgeois right” inevitable under socialism, some scholars have drawn the conclusion that distribution in accordance with labor signifies the application of this right in socialist society. In this connection, the question is posed as to whether one should proceed, even under socialist society, from distribution in accordance with labor to equalitarian distribution of social products among the working personnel. In the report by Comrade N. S. Khrushchev at the 21st Congress of the Communist Party, the complete lack of foundation of this posing of the question is revealed.

Socialist distribution in accordance with the principle “equal pay for equal work,” means, as Marx and Lenin pointed out, application of a single standard of rights to different people. This equal yardstick of participation in distribution of the social product, equal for all, is labor. By eliminating class inequality, socialism inevitably safeguards inequality in the shares obtained in the distribution of the products. People vary as to skill, as to gifts, and the ability to work, as to the size of their family, and therefore equal payment for equal work means that they obtain unequal incomes.

In his report to the 21st Congress of the Communist Party of the Soviet Union, Comrade N. S. Khrushchev noted that one must not confuse legal forms with the essence of the social relationships expressed thereby. “Capitalist law recognizes the means of production to be the private property of separate individuals, while socialism makes them social property, and completely breaks with capitalist law in this respect. Under socialism, all individuals have the same relationship to the means of production, and are paid in accordance with labor. In socialist society, a single rule obtains for all members of society capable of working: he who works not, neither shall he eat.”

In developing his teachings on the dictatorship of the

Some years ago the opinion was current that collective farm property was already beginning to inhibit the development of the forces of production. This does not accord with reality. Life is demonstrating that the collective farm system corresponds completely to the level and needs of development of modern productive forces in the countryside. The lag in a number of branches of agriculture, which existed in the not-distant past, was due not to the fact that the collective farm form inhibited the development of the productive forces, but to the fact that the possibilities and advantages of the collective farm system were poorly utilized. Realization of the measures for a fundamental improvement in the guidance of agriculture, set forth by the September, 1953, Plenum of the Central Committee of the Communist Party of the Soviet Union, and by a number of subsequent Plenums of the Central Committee, and by the 20th Congress of the Party, yielded remarkable results. During the past five years, major triumphs have been scored in agriculture, bearing witness to the fact that the collective farm-and-cooperative form of production has not at all exhausted its possibilities, and will be able for a

long time yet to come to serve the development of the productive forces of agriculture. The collective farm system makes possible a most productive utilization of powerful and modern equipment in agriculture. The transfer of this equipment to the collective farms is facilitating an upsurge of social production in the collective farms.

In the future, collective farm-and-cooperative property and state property will merge completely into a single, communist property. At the present stage of all-out upbuilding of communist society, the specific paths of development and mutual approximation of these two forms of socialist property are clearly being sketched out.

An opinion existed to the effect that the major obstacle to the uplifting of collective farm property to the level of general public property lay in the fact that the surpluses of collective farm production reach the market and are thus embraced in a system of commodity circulation. From this, an inaccurate conclusion was drawn: to the effect that the process of raising collective farm property to the level of public property must begin by a gradual replacement of commodity circulation by product exchange. In reality, the strengthening of material incentives to the collective farmers in the results of their labor demanded expansion of the sphere of commodity circulation. What was necessary was not elimination of value relationships but, on the contrary, the most complete utilization thereof for acceleration of upbuilding of the forces of production, without which the gradual transition to communism is unthinkable.

And it is with the growth of the productive forces that the level of socialization of collective farm production will rise, and collective farm property will come to approximate general public property, with a gradual erasure of the lines of demarcation between them. This is borne witness to by the following typical processes: the growth of indivisible capital, the uninterrupted upbuilding of the social business of the collective farms, which is coming ever more completely to embrace all branches of agriculture, the ever wider development and growth of inter-collective farm relationships of production, of various types of collaboration among them; the ever increasing combination and merger of collective farm means of production with government means of production, which will inevitably occur in connection with the development of electrification of agriculture, with the increase of mechanization and automation of production. This process will simultaneously signify a gradual transformation of collective farm labor into a variety of industrial labor.

"The historically inevitable merger of collective farm-and-cooperative with the general public form of property," stated Comrade N. S. Khrushchev at the 21st Congress of the

Party, "will occur in the future not as the result of the overthrow of collective farm-and-cooperative property, but by increasing the level of socialization thereof with the aid and support of the socialist state." The merger of the two forms of socialist property, the transformation of agricultural labor into a variety of industrial labor, will signify elimination of the difference between the worker and the peasant — fulfillment of the second and more difficult portion of the problem of elimination of classes which Lenin spoke of 40 years ago.

The Soviet people, led by the Communist Party, are marching confidently forward under the triumphant banner of Marxism-Leninism along the road of creation of the most just, and most advanced of social orders — communism. The present seven-year plan is a decisive line of demarcation on this road. Expressing the thoughts and feelings of millions and millions of Soviet people, Comrade N. S. Khrushchev stated: "The Communist Party, and the entire Soviet people, are filled with a firm confidence that they will cross this line as well and will emerge on the broad plateau, and that new horizons will then open up and that it will then be easier to progress. Ahead of us is a clear and noble goal. We have to work well to attain this goal."

The inspiring creative work of the Soviet people, who are the first in history to have built a socialist state and are today the first to lay the road to the sparkling peaks of communism, is a magnificent memorial to V. I. Lenin, whose deathless genius will live eternally in the memory of liberated mankind.

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V. Nemchinov:

Current Problems of Soviet Economic Science

The 21st Congress of the Communist Party of the Soviet Union marks the beginning of a new historical period in the life of our homeland — the period of all-out upbuilding of communism. The Congress outlined a grandiose program for the uplift of the productive forces of the country, and of a significant strengthening of its economic potential and the creation of the foundation for communism in material technology. In the resolutions of the Congress, and in the report of Comrade N. S. Khrushchev, a profound creative elaboration of new problems of Marxist-Leninist theory was presented, representing a tremendous contribution to the treasurehouse of Marxist-Leninist economic science. On the basis of the experience of the upbuilding of socialism by the entire people, and of the experience of the Communist Party which is the embodiment of collective wisdom and the will of the people, the documents of the Congress reveal new sources and reserves for our headlong forward advance to communism.

The 21st Congress of the Communist Party of the Soviet Union has set forth the enormous and ever rising significance of science, and of economic science among others, in the cause of the upbuilding of communism. In his report to the 21st Congress of the Communist Party of the Soviet Union, Comrade N. S. Khrushchev pointed out "Before the scientists in the fields of the social sciences, and particularly before the science of economics, lies the objective of creative generalization and bold theoretical solution of the new problems advanced by life."

Under socialism, the elemental economic processes are replaced by the planned development of the economy, characterized by consciously-maintained proportionalities, utilization of recognized laws of social development in the interests of all the members of society. Under the conditions of socialism, the economist has to become a social engineer. It is his obligation to raise the results of his scientific investigations to such a level of precision and concreteness as would make it possible to transform the recognized regularities into a scientifically founded and precise mechanism for the conscious and planned guidance of the national economy. The investigations of Soviet economists do not as yet correspond to this high requirement. The scientific research institutions in economics do not as yet have the required intimate connection with the planning of the national economy, and do not give adequate assistance to the practical work of the upbuilding of communism.

In the course of our economic development, an enormous number of practical problems requiring theoretical solution constantly appear. The need for prompt discovery of and elimination of disproportions and contradictions developing in our economy is particularly acute. In its studies of capitalist society, the science of economics is called upon to provide a more or less precise description of the economic processes occurring, and a scientific explanation thereof. However, with respect to the socialist economy, economics faces a new objective: to provide a scientific foundation for planned economic upbuilding in the interests of provision of complete well-being and all-round development for all members of society. Thus, under the

conditions of socialism, the science of economics acquires a new social function. It is its task to become a truly scientific weapon in the business of organization of the national economy and the conscious control of economic processes. For this end, the science of economics must master a measurement of economic processes and assure a scientific control over this standard of measurement. As long ago as the first months of the existence of the Soviet government, V. I. Lenin wrote that under the conditions in which the rule of the proletariat has been created and assured, the essence of the socialist transformation lies in the organization of businesslike, practical monitoring of the standard of labor and the standard of consumption. Ascribing enormous significance to intimate, organic connection between theory and practice, V. I. Lenin pointed out that "the historical moment has arrived in which theory is transformed into practice, revivifies practice, corrects practice, checks up on practice..." (1)

Under socialism, the science of economics cannot limit itself only to the qualitative formulation of its theoretical propositions. These propositions inevitably take on a qualitative nature as well. We know, for example, the enormous significance for the upbuilding of socialism and communism possessed by the premise formulated by V. I. Lenin that the precondition for expanded reproduction is the priority growth of production of the means of production. In his work "On the So-Called Market Question," V. I. Lenin employed a numerical example to show that under the conditions of expanded reproduction, growth of production of the means of production designated for the sphere of the production of the means of production proceeds more rapidly than growth of production of means of production designated for the sphere of production of means of consumption, and the growth of these means of production in turn proceeds more rapidly than the production of consumer goods. On the basis of this Leninist economic analysis, the political economy of socialism formulated the hypothesis to the effect that priority growth of heavy industry is required as the primary condition for continuously expanding reproduction. This rule has always been taken into consideration in the planning of our agriculture. The experience of management of the socialist planned economy has demonstrated the correctness and scientific foundation of this fundamental principle of the political economy of socialism. Under socialism, in conditions of dominance of social ownership of the means of production, and planned operation of the economy, utilization of this law makes possible assurance of the continuity of the process of expanded reproduction.

Of no less significance is the scientific concept in the political economy of socialism to the effect that high rates of economic development are inherent in the very nature of the socialist national economy. In his speech at the 21st Congress of the Communist Party of the Soviet Union, Comrade N. S. Khrushchev emphasized with particular force the fact that this scientific premise is correct and well founded. It is well known that, in bourgeois economic literature, "works" are still appearing, whose authors

attempt to show that the high rates of development of the national economy of the USSR are, as it were, merely the consequence of our economic backwardness. Despite the fact that the Soviet Union has overtaken economically many advanced capitalist countries and is successfully resolving the problem of catching up with and surpassing the most advanced capitalist country economically, the United States of America, capitalist economists continue stubbornly to write to the effect that the rapid rates of development of the national economy of the USSR constitute a consequence of the low absolute level of its economic development. However, the economic potential of the USSR is increasing sharply from year to year. Whereas in 1913, our country produced only 1/13th or 1/14th as many products of industry per head of population as did the United States, and in 1937 American production per capita was still 6.5 times as high as ours, in 1958 it was only 2.1 times as high. As the result of fulfillment of the seven-year plan of development of the national economy, our country will, in 1965, occupy first place in Europe in production per head of population, and will come to surpass the United States in 1970-1975. The national income of the USSR will rise 62-65% during the seven-year plan, along with a simultaneous increase in the real incomes of workers and peasants by 40% on the average.

In the political economy of socialism, the rates of increase of production have never been regarded as a function of time, and Soviet economists have never been in agreement with the hypothesis that the rates of growth of the national economy are a function of the level of development it has attained. Marxist-Leninist political economy asserts that rates are a function of the social-and-economic structure of society. The rates of growth of production depend, in particular, on the relationship between costs and the material goods in the national economy. Under conditions of social acquisition of the surplus product and adequate centralization of the process of accumulation of the value of the surplus product, it is always possible to maintain such a relationship between the value and the material substance elements in the national economy as would assure the necessary economic potential for expanded reproduction. Maintenance of a corresponding structure in the national economy makes it possible to return to social production a necessary and sufficient portion of the newly created value in the form of productive capital investments assuring the process of expanded reproduction. This can be realized, in particular, thanks to the fact that capital investments are brought into correspondence with the economic potential of expanded reproduction which is determined by the scale to which the national income created in the sphere of production of means of production exceeds the material costs in the sphere of production of consumer goods.

We have attempted to characterize the new social function of the science of economics under socialism on the basis of the example of practical utilization of the two scientific hypotheses of the political economy of socialism stated above. A significant illustration thereof could well be the practical utilization of the scientific hypothesis of the political economy of socialism to the effect that, under conditions of normal economic development of society, the increase in the productivity of labor proceeds more rapidly than the rise in wages. However, in this situation, we would see simultaneously evidence of the inadequate concreteness and completeness of formulation of this premise, leading in practice to unjustified and harmful spreads in the levels of payment to personnel in various branches of the national economy and to various classifications of workers.

Soviet economists are far short of carrying out their responsibilities to socialist society in terms of a profound theoretical and adequately specific elaboration of problems such as determination and scientific rationalization of the share of the social product which is distributed among working people in the form of individual payments to labor and the share distributed free of charge in the form of the so-called social forms (public education, health protection, maintenance of day nurseries and kindergarten, boarding schools, the pension system, etc.). As we know, these funds will rise to approximately 360 billion rubles by the end of the seven-year plan as against 215 billion rubles in 1958.

In the course of social development, the practical demands made upon the science of economics will rise continually. Recently, problems of scientific determination of economic criteria of optimum distribution of material and monetary funds and labor resources both between individual construction sites and among the various economic districts have become particularly acute. At the 21st Congress of the Communist Party of the Soviet Union, attention was drawn to the need for a careful choice of variants of distribution of capital investments so as most efficiently and in the shortest possible time to attain increase in productive capacities, with maximum output of industrial products, and absolute adherence to the condition of a pronounced increase in the productivity of labor and reduction in costs. In planning new industrial enterprises, the determining criterion must be reduction in the volume of capital investments per unit product accompanied by a simultaneous improvement in the conditions of labor. In distributing capital investments among the economic districts of the country, preference is given to those districts where the invested funds will yield the greatest economic results. At the present time, the problem of further complex development of the various economic districts of the country on the basis of the most rational and efficient utilization of their natural resources, with due consideration to the need for specialization of enterprises, improvement of cooperation among them, and elimination of irrational transportation, is attaining decisive significance.

The need for improving the rate of profit and the economic efficiency of the national economy was emphasized at the 21st Congress of the CPSU with particular force. The science of economics was presented with the demand for elaboration of precise methods of determining economic efficiency in all branches of the national economy, and of the best possible relationship among the branches of the national economy, and of establishing precise dates for amortization of capital investments. All this pertains to the problem of scientific economic rationalization of the choice of optimum decisions in the distribution of resources of material labor, in the planning of social production and capital investments. The central criterion in solution of problems of this type is the attainment of maximum economy of social labor by increasing productivity, the most efficient and economic utilization of the tools of labor, capital investments, raw materials, materials, fuel and power, in which past labor has been concretized.

What was demanded at the Party Congress was essentially the transition to a new and higher scientific level of economic investigations on the basis of further development of the fundamental social function of the science of economics under socialism. In his speech at the Congress, the President of the USSR Academy of Sciences, A. N. Nesmeyanov, stated that the science of economics has to become an exact science in the full sense of the word, and has to become a searchlight in the planning of the national

economy and must make wide use of the latest achievements of computer technology.

The new stage in the development of the science of economics demands that precision and concreteness in the results of scientific investigations be raised to a higher level. Under the present conditions, such terms as "high rates," "more rapid growth," "favored development," "necessary proportions," etc. are no longer adequate. The precision of scientific premises, definitions and recommendations must be significantly increased.

V. I. Lenin wrote that the very essence and living soul of Marxism lies in the concrete analysis of concrete situations. Economists must never forget these instructions by Lenin, and today their significance rises even higher. The rapid development of the national economy, the improvement and increasing complexity of its structure, the pronounced expansion of the scales of social production all present the science of economics with new, higher demands in terms of greater profundity of investigations and greater precision and concreteness in the results thereof.

However, greater concreteness in the results of economic investigations must under no conditions be identified with empiricism in investigations. Concrete economics is not counterposed to theoretical economics, but, on the other hand, theoretical propositions must meet the requirement of more precise definition of the conditions necessary and sufficient for a given theoretical solution to be correct.

Simultaneously, note must be taken of the lack of justification for, and the erroneousness of the assertion that a theoretical solution of economic problems is the business of political economy alone, and that a large amount of departmental economics has no basis in theory. The history of the development of the science of economics shows that special branches of economic science (so-called concrete economics) also have their theoretical premises, but they are specific and even more concrete.

At the present time, a number of highly important scientific problems are developing in the borderline fields of knowledge where economics and technology abut upon each other. The economist, as V. I. Lenin pointed out, must always look ahead, in the direction of technical progress, or else he will inevitably lag. It was observed at the 21st Congress of the Communist Party of the Soviet Union that our science of economics today lags behind the progress of technology.

The further development of the science of economics is intimately related to a deepening and expansion of investigations in the field of engineering economics. Under present conditions, the economist cannot conduct scientific investigations in isolation from the study of technology and the equipment of production, as were that the case, the results of the investigation would not attain the required level of concreteness. However, engineering must not be confused with economics, as, if the two were mixed up, one would readily find, in the place of a specific investigation of the relationships of production among people, an analysis of relationships among things. Investigations of production economics are only one of the aspects of economic analysis. They do not at all contradict the latter. They are in the fullest sense of the word economic studies, and should therefore not be transformed into purely technical ones. The significance of the production economics aspect of investigations will increase substantially in the course of further development and improvement of the new social function of the science of economics under socialism.

Simultaneously, the role and significance of the utilization of methods of mathematics in economic investigations

will become greater. Marx was one of the first economists to use mathematical methods in his economic studies. He saw in mathematics a serious and most valuable supplement to economic analysis. Specifically, Marx placed his diagrams of expanded reproduction in the form of an algebraic equation for simple reproduction and of a mathematical inequality for expanded reproduction.

The very outstanding economist N. G. Chernyshevsky, the most outstanding thinker among the Russian revolutionary democrats of the 19th century, in commenting upon J. S. Mill's *Foundations of Political Economy*, wrote, "We have already seen many examples of the methods used by political economy in the solution of the problems that face us. These are mathematical methods. Nor could they be otherwise, inasmuch as the object of this science consists of quantities subject to counting and standards, and comprehensible only through calculation and measurement." (2)

The application of mathematics in economic investigations increases particularly under the conditions of socialist society. The socialist planning of the national economy is based upon a large number of diverse calculations for the purposes of planning and in fields of economics. These calculations, which are a supplementary device in planning, are at the same time of enormous significance. The possibility of utilizing modern computer technique, electronic computers, and automatic calculators in planning and economic calculations, will raise even higher the significance of mathematical methods in economic investigations.

The Soviet science of economics faces the problem of determining the social value of all consumer goods, and of the objects and tools of labor. Without determination of value, it is impossible to guide the economy correctly and on scientific foundations. This problem is more difficult than determining costs in socialist enterprises and combinations thereof. A proper solution of this problem demands a knowledge of mutual relationships in the field of the exchange of the objects and tools of labor among all branches of the economy and the individual fields of production. This "spiderweb" of interrelationships may be estimated quantitatively only with the aid of modern mathematical methods and electronic calculating machines. Utilization of auxiliary mathematic and computer devices, will, among other things, make determination not only of direct costs but of all the elements entering into the total costs, and necessary for the production of various material goods, with consideration for the entire vertically-integrated system of production (from the extraction of raw materials and the production of the necessary tools of labor right to the final product going to public use). This will permit the taking into consideration of all related forms of production including those most distant therefrom. Economic calculations permit determination not only of the total outlays of living labor (outlays of working time, wage funds), but of all kinds of expenditures of materials (power, fuel, raw material, capital investments).

The utilization of mathematical methods and modern calculating devices is of major significance as well for determination of various standards (i.e., standards of material supply). Under the usual methods of determination of standards, every correction of any one of them, however minor a correction, requires an enormous and often unconscionable amount of labor in recalculating and correcting the entire complex of standards technically interrelated with that being amended. Modern mathematical methods (i.e., matrix algebra), will make possible rapid and precise performance of all the necessary calculations.

The latest calculating devices are of extremely great

importance in defining complex criteria in the national economy, and in particular planned prices, specifically in the selection of optimum planned variants in the national economy and for purposes of production, in every kind of decision required to satisfy given demands (for example, division of maximum economy of social labor, gaining of time, etc.). The solution of such problems involves the major work of preparation in the assembly and systematization of data, and in bringing them into a specific order for elaboration on computers by means of the system of so-called computer programming. This work is, however, completely within available means. Mathematical methods and calculating machines will make possible mechanization of planning and economic calculations, and on that basis, the carrying out of exceedingly complex and extensive calculations required in the planned management of the national economy and the rational organization of social production. It goes without saying that these latest devices are supplemental in character and they will serve to reform and reorganize only the system whereby calculations are made for planning and economic purposes. But this in no way diminishes their great significance.

Thus, with the aid of modern mathematical and computer technique, it is possible to solve complex economic problems in the sense indicated above. In this connection, it is appropriate to emphasize the significance of Soviet econometrics, which, as a supplemental scientific discipline, has as its subject the theory of planning and economics calculations and the means of mechanization thereof. Skilled economic analysis must doubtless precede any scientific calculation for purposes of economics and planning. However, as a rule, it must be accompanied by quantitative analysis.

A number of our economists have a well-known and rather strong prejudice against the use of mathematical methods in economics. This is explained by the fact that bourgeois schools of economics (for example, the Austrian school of marginal utility and the Anglo-American school of econometrics) have attempted to base their pseudo-scientific apologetic conceptions in purely mathematical methods of investigation, using the latter to substitute for social and economic analysis. However, this does not at all mean that Soviet economists should refrain from application of mathematics in their economic investigations. Mathematical methods are a powerful auxiliary in analysis, but have to be properly coordinated with a qualitative and quantitative study of economy. The Soviet science of econometrics is called upon to create the required scientific basis for a system of calculations in the field of planning of economics, and to guarantee correct application of mathematical methods and of modern calculating machines.

In developing the new social function of the science of economics, skilled and truly creative Marxist-Leninist investigation of pressing problems in the national economy, and an intimate, organic connection between the science of economics and the practice of the upbuilding of communism are fundamental and decisive.

Under the present conditions of the upbuilding of communism, the problem before the science of economics which is most important is that of social estimation of cost of production and the results of economic activity and of proportions within the national economy. Conscious guidance of the complex and exceedingly large social production is impossible without employment of social criteria of evaluation. Economy of social labor is the highest criterion for evaluation of the results of economy activity not only today, but in a developed communist society. And under communism, society will have to take into consideration the cost

to it of the production of various material goods created to satisfy the growing social needs and to assure complete well-being and the all-round development of all members of society. These estimates must have an objective, and not a subjective character. Under the conditions of capitalism, the social criteria for such estimates come into being spontaneously, behind the back of the producer. In socialist society, criteria for such estimates are determined consciously, although they come into being objectively, on the basis of definite economic regularities which cannot arbitrarily be violated or avoided.

The principle of economy in social expenditures of labor underlies social estimates under socialism. In determining the socially necessary expenditures of labor, one must proceed from the process of expanded reproduction. In the process of production, technological ties along the line of productive utilization of fuel, energy, raw materials, and the tools of labor are of significant importance. In reproduction, the dominating position is occupied by a variety of economic ties in utilization of social conditions of labor (the equipment and power available to labor, the availability of natural resources, the degree of social division of labor, etc.). Moreover, so-called inverse relationships, which also have to be borne in mind, arise in the process of reproduction. In speaking of the definition of value, Marx notes, "Although the value of a commodity is determined by the quantity of labor it contains, this quantity itself is determined socially. If the labor time socially necessary for production of the commodity changes, and one and the same quantity of, say, cotton represents a greater amount of labor under unfavorable conditions than under favorable conditions, this has a reciprocal effect upon the existing commodity, which always plays the role only of an individual example of its kind, the value of which is always measured by socially necessary labor, and therefore is always measured by the labor necessary under the social conditions existing at the given time." (3) Further, Marx presents additional examples of reciprocal relationships arising under conditions of change in social conditions (introduction of new and more modern machines, etc.).

Thus, determination of the socially necessary outlays of labor, as the substance of value, is by no means an ordinary statistical totalling merely of average factual expenditures of labor. This is a complex economic calculation with consideration of all the stages of the production of the given product and changes in the conditions of labor occurring in the process of expanded reproduction. Among these social conditions of labor, under conditions of expanded reproduction, the capital investments required to assure expanded reproduction occupy a special place. In order to determine the socially necessary expenditures of labor, it is important to calculate the total expenditures of labor. However, these two concepts do not coincide with each other. In determining total expenditures of labor in production of the given final product, the need arises to account for expenditures of labor not only at some given enterprise (both direct shop-wise expenditures, and factory-wide expenditures of labor upon supplementary and general types of work), but also of all the related types of production, bearing in mind all the preceding stages of production, including the most distant. Moreover, the necessary expenditure of labor involved in expanded reproduction require accounting. In this connection, when dealing with capital investments, outlays of labor are considered not only in terms of the worn-out portion of the basic capital involved (machine structures in which production takes place, etc.), but the expenditures of labor upon supplementary capital investments (new and rebuilt equipment and buildings), socially

necessary to assure expanded reproduction in the degree covered by the given production cycle or period. In determining the socially necessary outlays of labor upon production of any given product, changes in the conditions of labor in the utilization of natural resources are also taken into consideration. In determining the socially necessary outlays of labor required, for example, for production of coal, it is necessary to take into consideration the sharp rise in the share of coal production occurring in open cuts in eastern Siberia, and in the production of, let us say, wheat it is necessary to give consideration to the opening of virgin lands in Kazakhstan and Siberia.

Changes in the conditions of labor have to be reckoned not only as a whole over the entire national economy, but with differentiation in terms of the major economic districts of the country (for example, Donets and Kuzbass coal, Kazakhstan, Ukrainian, and Volga wheat, etc.), and by means of production (for example, electric power produced by thermal and hydroelectric stations.) Despite the high complexity of these economic calculations, they are entirely realizable with the assistance of modern mathematical methods and computer techniques.

Among Soviet economists, the opinion was widespread for a long period to the effect that value is not cognizable and incapable of being calculated, even approximately. The "theory" of the incognizability of value has been overcome, and today has become a purely practical problem of organization and performance of the appropriate economic calculations. The existing differences of opinion on methods of determining value must not serve as an obstacle to the calculation of the socially necessary outlays of labor as the fundamental portion of a more general problem — determination of the social value of production of means of consumption, and of the objects and tools of labor. As has been shown by preliminary discussion, all the methods of calculation of social value proposed demand virtually identical initial data, the collection and elaboration of which will involve the bulk of the labor and funds required in the organization of this investigation. It is deemed desirable to carry out economic calculations by all the existing variants of methods, and then to subject the results obtained to economic expertise. The additional outlays of labor and funds for this purpose will be insignificant. S. G. Strumilin, member of the Academy, suggests that investigation in determination of social value be made in the form of social book-keeping and accounting. However, the carrying into life of this correct proposal would doubtless require preliminary economic investigations based on the appropriate economic calculations.

Determination of social value is exceedingly necessary in developing scientifically founded systems of planned prices. The theory of prices isolated from value will not withstand criticism of any kind. Soviet economists have a pressing problem of creating a theory of planned prices. Many elements for this theory already exist, but thus far no unified and structured generally-recognized theory has been developed. Comrade N. S. Khrushchev has formulated the most important requirements in the field of planned prices: prices must be at the same time stable, flexible and adequately differentiated. Under the conditions now existing, the planned price is the most important economic criterion on the basis of which every government and collective farm enterprise can build its own profitable business on the foundation of cost accounting.

Investigations and discussions of the problem of price formation under the conditions of socialism have shown that:

(1) Maximum satisfaction of social needs is attainable

under conditions in which the planned prices for the final consumer goods are based upon social value (socially necessary labor time).

(2) These prices, which differ from value, must correspond, on the one hand, to the balance sheet of monetary income and expenditures by the population and, on the other hand, to the solution of the optimum objective of assuring possible minimum socially necessary outlays of labor under the given specific conditions (the principle of maximum economy of social labor).

In terms of semi-finished goods, that is, of objects falling into the category of material cost of production, the discussion has not yet come to an end. In our opinion, wholesale surrender prices for material equipment and procurement should not include the value of the surplus product going to maintain the nonproductive sphere. Wholesale surrender prices do, however, partially include the socially necessary expenditures upon additional capital investments going to expand production. In order to assure the necessary centralization of accumulation of these funds deductions from government-owned and collective farm enterprises should go to the USSR finance ministry in accordance with the basic capital in their possession. The absolute scale of these deductions should be fixed in advance and for a long term, so as to enable the enterprise, in increasing the output of product per unit of producing capacity, to be in a position to reduce the total number of deductions per unit product.

The development of a system of planned prices consequently requires complex economic calculations in determining the socially necessary outlays of labor, various balance calculations (balances of public consumption and income, the balance between expenditures and production), calculations with respect to the mutual coordination (iteration) of prices for semi-finished and final products, with consideration of the entire "spiderweb" of production, arising along the lines of material expenditures in connection with outlays of fuel, energy, raw materials and finally, in solution of problems of optimum utilization of objects and tools of labor and maximum economy of living labor.

It is evident from the foregoing that economic calculations in developing systems of planned prices include solution of problems of three types: balance problems in the mutual correlation of prices and the selection of optimum variants (provision of a maximum level of consumption and minimum expenditures of labor in specific social conditions). It would be desirable to organize special, more profound scientific investigations with respect to these problems, utilizing modern mathematical methods and computer technology, permitting rapid, prompt and precise solution of these complex problems.

The problem of cost and planned prices is a central and nodal problem in the field of national economic estimates. The problem of increasing the social productivity of labor, this most decisive criterion in the national economy, is intimately related to the problem of social value, as the social productivity of labor is the reciprocal of the magnitude of value. Indices for individual labor productivity may also be expressed in indices of economy of labor, inasmuch as the amount of labor required for production is the reciprocal of the productivity of living labor. In studying the productivity of labor, it is important to determine the factors and reserves for growth in labor productivity in the individual branches of industry, agriculture, construction and transport.

In the sphere of criteria for the making of estimates with respect to the national economy, we also find the problem of the economic efficiency of capital investments and

the introduction of new technology. All these major and complex economic problems are involved with solution of the problem of determination of social value and the creation of a scientifically-founded system of planned prices. The coefficients of economic efficiency of capital investments and the reciprocal indices of terms of amortization are also intimately related with the general coefficients of increase in labor productivity and expansion of the physical volume of social production.

It would be desirable to carry out fundamental mass investigations in determining the factual economic efficiency of capital investments and the introduction of new technology during the years of the five-year plans. Of particular significance is a special rendition of all these economic data, both planned and realized, with respect to new construction carried out after the Second World War. It would also be desirable to have summary works on the economic efficiency of capital investments in the capitalist countries. All these data, and the corresponding theoretical propositions, would make it possible to determine the branch-wise standardizing coefficients of economic efficiency of capital investments as criteria with which the planned data of every new industrial, agricultural and transport building project could be compared.

Along with the problem of estimates in the national economy, briefly examined above, the problem of proportions in the national economy is also of great significance. A study of the system of proportions in the national economy involves investigation of such important problems as socialist expanded reproduction and balance in the national economy, social division of labor, specialization, subcontracting, and combination of types of production, rational distribution of social production and all-round development of economic districts. The science of economics faces the problem of profoundly studying changes in the social and economic relationships existing between the working class and the collective farm peasantry, between town and country, particularly in connection with the gradual approximation of the two forms of property (general public and collective farm-and-cooperative), and the erasure of the distinctions between town and country, and between physical and mental labor.

The study of the economic structure of socialist society in the period of all-out upbuilding of communism is of primary significance. The economic structure of society reflects the social division of labor above all else, and this undergoes significant changes in connection with the development of the principle of democratic centralism in the organization and management of the national economy, and also in connection with the gradual transfer of cultural servicing of the population to the hands of membership organizations, problems of development of physical culture, the maintenance of public order, etc. Transition to a work-week with two days off and a reduced workday will sharply change the relationship between working and free time, and will open enormous possibilities for elevating the cultural level of the working people and for development of a system of people's universities and community centers.

Thanks to the rapid growth of the social funds going to satisfy the needs of society (public health, education and the upbringing of children, maintenance of those incapable of working, etc.), significant changes will take place in the structure of funds set aside to satisfy the various needs of society. The repeal of taxes on the population will change the ratio between socially necessary and surplus labor, and between the surplus products created and realized.

The Soviet science of economics examines economic proportions in the process of motion, in their dynamics.

Consequently, it deals with shifting proportions which vary in a determined direction in accordance with the economic laws of socialism, primarily in accordance with the fundamental law of socialism and the law of planned, proportional development of the national economy.

In our economy, the necessary national economic proportions are assured to a considerable degree by creation of various social funds: for amortization, for capital investments, for deductions so as to build up a wage fund, for social assistance and insurance, as well as social funds in collective farms, and the fixed and circulating capital of government enterprises as well as the indivisible capital of the collective farms, material costs, payment to labor, enterprise funds, deductions from profits payable to the national treasury, the turnover tax, funds for centralized supply of materials, commodity funds of consumer goods, etc. Marx foresaw the need for formation of various public funds under the conditions of the new, socialist society. The task before Soviet economic science is to bring all these social funds into a single system in the form of the so-called economic budget of socialist society, which would reveal planning accounts reflecting the formation and expenditure of all the social funds. The concept of an economic budget is considerably broader than that of the government budget which is compiled by the Ministry of Finance of the USSR and does not at all reflect the entire social product and the national income.

The economic budget of socialist society must constitute an organic portion of the unified balance of the national economy. At the same time, as the balance of production and distribution of the social product is a summary document of government statistics and accounting, the economic budget is a summary document of socialist social book-keeping. The economic budget of the socialist society and the balance of production and distribution of the social product are two forms of economic tables of the socialist society. At their base is the Marxist-Leninist pattern of expanded reproduction, concretized with respect to contemporary economic conditions. In both these summary economic documents, based on the pattern of expanded reproduction, the dual aspect of examination of social production is retained: the value department of the social product (the fund for material costs, the fund for the payment of labor and the fund for the surplus product), and the categorization of the fundamental social subdivisions in terms of material substances (production of means of production and production of consumer goods). This pattern is subject to being rendered in further detail. Material costs must be divided into expenditures upon objects of labor and the tools of labor. The fund for the payment of labor should have special categories for funds distributed in accordance with labor and free of charge; the fund for surplus product should be broken down into that which goes to accumulation and that which goes to consumption in the non-productive sphere. In dividing the social product in accordance with its material and tangible makeup, it is necessary to distinguish production in the sphere of production of means of production and that in the sphere of production of consumer goods. Breakdown of social production in accordance with tangible material composition must be preceded by a subdivision of the entire social product in accordance with the forms of property (general public and collective farm-and-cooperative). This detailed scheme of expanded reproduction is an economic model of the socialist society.

The further concretization of the scheme of expanded reproduction proceeds in the form of the plotting of a single balance of the national economy consisting, specifically, of:

- (1) An economic budget (the aspect of funded proportions

in the national economy),

(2) The balance of production and the distribution of the social product, and,

(3) The balance of expenditures and output of production (the aspect of interdepartmental relationships of production).

It is characteristic that the aspect of interdepartmental relationships of production was clearly expressed as far back as the first balance of the national economy of the USSR in 1923-1924. The method of balances of expenditures and output of production may be applied to analysis not only of interdepartmental relationships of production, but of interdistrict departmental ties.

Currently, an attempt is being made at compilation of a balance of expenditures and output of production for analysis of interdistrict production ties. Investigations of this type are of major significance for study of specialization, subcontracting, and balanced development of the economy of the respective economic districts, and also for studies of the territorial division of social labor. This is, of course, only one of the methods of elaborating the problem of specialization and subcontracting of social production, which is so important under present-day conditions and demands quite a series of production and economic studies for its solution.

At the 21st Congress of the Communist Party of the Soviet Union, special attention was given to correct disposition of social production across the territory of the country. The practice of the upbuilding of communism expects from Soviet economists serious scientific generalizations, special deep scientific monographs critically generalizing practical experience, and in particular the experience of economic mastery of the new districts, the moving of production to the east, etc.

In the distribution of socialist production, two sides of the organization of production obtain objective expression: its vertical and its horizontal organization. As far back as 1918, in his "Sketch for a Plan of Scientific and Engineering Studies," V. I. Lenin wrote that the plan of reorganization of industry and the economic upsurge of the country must include "a rational distribution of industry in Russia from the point of view of availability of raw materials and of assuring the least possible loss of labor in the transition from the processing of raw materials through all subsequent stages in the development of intermediate goods up to the production of the final product." (4) Also notable is the fact that Lenin presented the problem of the horizontal organization (the distribution of enterprises and centers of industry across the country) simultaneously as a problem of its vertical organization (processing from raw material through to the final product). The only rational distribution of production is one which assures, in each instance, optimum variants with minimum losses of labor.

Social production is the application of products and natural forces, in historically determined social forms, for the purpose of satisfying the needs of man and of society as a whole. From the point of view of society, the final finished product is the product required by the population in the form of foodstuffs, clothing, housing, etc., accumulated by society in the form of fixed and circulating capital, and also consists of products which the given production complex exports beyond its boundaries. In this connection, the problems of rational territorial combination of centers of consumption (centers of concentration of population and centers of consumption of industrial raw material), of centers of production (points where intermediate and finished final products are processed) and centers of concentration of resources of raw materials and power (sources for the

production of objects and the forces of nature) are quite important.

The economic profile of any given region (or republic) is determined by the makeup of the products which the given district provides to other districts under conditions of a social distribution of labor, i.e., the composition of the inter-oblast commodity production. However, not all products entering into the social product are of equal significance for the national economy. Of most importance to society as a whole are the production of energy (specifically of electrical energy) and of ferrous metal (steel), which assure the over-all increase in productivity and saving of man's work. In the formation of some economic districts, the production of energy or metal is of primary importance and it determines the profile, the foundation of specialization and combination in the production complex. In the setting up of other districts, this role is played by production of light and non-ferrous metals, by chemical industries, as well as the production of wheat, cotton, flax, milk, meat, etc. The economic profile of the district is determined to a considerable degree by the combination of natural wealth, assuring development of the production of energy (coal, petroleum, gas, hydroelectric resources), steel (deposits of iron ores and coking coals), the production of chemical raw materials (deposits of various salts, natural gas, forest resources), and also the mastery of land masses suited to the cultivation of wheat, cotton, the sugar beet and other agricultural crops.

Usually natural resources are distributed unevenly across the territory of the country; deposits large enough for modern large-scale production are concentrated only in specific spots. Social development, on the other hand, is characterized by a tendency toward uniform distribution of production, a tendency of raising economically backward districts to the level of the most advanced economic districts. However, such tendencies do not at all signify the need for production of all possible products in each individual district. On the contrary, uniform distribution of production assumes territorial specialization and a practical territorial social division of labor. The social tendency toward uniform distribution of production signifies only a striving of society to increase, by all possible means, the level and potential of industrial and agricultural production in all districts of the country, on the absolute condition that a maximum of production be obtained with minimum outlays of labor and material resources, and that there be an all-round complex utilization of the available natural and economic resources of each territory.

The problem of development of the world system of socialism and the collaboration of the socialist countries is intimately related with the fundamental problems of distribution of social production. Economic investigations in this field presuppose a scientific elaboration of the foundations in principle of the development of the international socialist distribution of labor, and the establishment of specialization of the national economy of the various socialist countries in terms of the most important branches of industry and agriculture, with the specific requirement that there be a correct and rational utilization of available production capacities, of power, raw materials, labor and other resources, etc. Here, too, is included the hypothesis of determination of possible major trends in specialization and subcontracting of production among the countries of the world socialist system. Such an investigation presupposes the elaboration of methods of comparing the major indices of the national economy (labor productivity, national income, cost, price levels, currency relationships, the state and structure of commercial and payment balances, etc.).

All these investigations are particularly pressing at a time when the general front of economic and cultural development of all the socialist states is evening out, as was noted in the resolution of the 21st Congress of the Communist Party of the Soviet Union.

The next important group of questions faced by Soviet economic science pertains to the problem of administration and organization of the national economy. In recent years, the Party and the government have carried out a reorganization of the administration of industry and construction, and have developed new methods and forms of management of agriculture. This experience requires careful study and generalization.

The problem of improvement of the planning of the national economy is particularly pressing. The general scientific foundations for the operation of a planned economy and of planning of the national economy are the premises of Marxism-Leninism in their concrete application to the conditions of management and organization of a socialist economy. In addition, the principles and methods of the planned guidance of the socialist national economy itself, of planning documentation, of economic and planning calculations, the procedures and mechanization thereof, require theoretical generalization and rationalization. The proper system of planning can be organized only on the basis of a sufficiently perfect and modern system of scientific information about the real economic processes subject to planning. Scientifically organized monitoring of the course of fulfillment of the plans is the starting point for correct organization of the work of planning.

Improvement of planning is indissolubly connected with the further development of the principle of democratic centralism in the guidance of the national economy. It must be stated that the principle of democratic centralism is to this day inadequately realized in some branches of national economic planning (for example, in the planning of supplies and materials). In the system of material supply, bureaucratic elements and elements of plain-and-simple administrative methods are still in use. The planning of material supply does not always completely and flexibly provide for changing needs and is not in correspondence with the fundamentals of cost accounting. The existing bottlenecks in terms of supplies of various materials for purposes of production are often caused not by a shortage of these materials, but by diseases in economic exchange. It is necessary to make an all-sided study of the system of supply of materials and to work out scientific recommendations to improve the planning of this important branch of the national economy.

A serious shortcoming of present-day planning is its discrete character (the fractionization of planning by years and quarters), while the process of social production is continuous. The problem of continuity in planning, posed by A. N. Kosygin at the 20th and 21st Congresses of the Communist Party of the Soviet Union, requires the most rapid possible solution. Conversion to the compilation of long-range planning, with breakdown by years, will not solve this problem fully, by a long shot. The discrete, interactive nature of planning is to be explained to a considerable degree by the predominance therein of elements and indices expressed in kind.

Improvement of planning requires broader utilization of economic levers for the administration of the national economy related to the strengthening and development of cost accounting as a method of running the economy in a planned society.

The economic budget, with its lever entries with respect to the formation and expenditure of social funds, should

become one of the most fundamental documents of national economic planning both in the capital and out in the field. Improvement in planning involves a broader utilization of value (money) indices in the national economy (for example, commodity production, the value of productive capital obtained per ruble, the cost of commodity production measured in rubles), as well as with perfection of the system of planned prices and the tax system (specifically, the turnover tax).

In developing problems of the socialist economy, Soviet economists must strengthen their critique of contemporary bourgeois economic theories and of present-day revisionism and reformism. It is desirable systematically to carry out scientific conferences similar to the inter-university conference on criticism of contemporary anti-Marxist theories run at Moscow State University in December, 1958. At the same time, it would be desirable to systematically publish bulletins devoted to a critical review of the work of bourgeois economists, in which problems of the development of our national economy would be examined, as well as problems posed in the Soviet economic literature. Major attention must be concentrated upon a critique of the hypotheses of modern revisionism with respect to the "superclass nature" of the state, of the "peaceful growing over" of capitalism to socialism, of "national communism," of the possibility of national regulation and planning of the capitalist economy, of the alleged advantages of consumer credit, marketing forms of cooperation in agriculture over the producers' cooperatives, etc. A developed Marxist-Leninist critique should be directed at bourgeois and reformist wage theories, as well as to the fashionable theories of the income revolution, the second industrial revolution, "people's capitalism," the evolutionary transformation of capitalism, etc.

Problems related to the study of the world economy, of contemporary imperialism, of the breakup of the colonial system, of the deepening of the general crisis of capitalism, and also with study of the special features of reproduction, cycles and crises in contemporary capitalist economies, require special investigation. Particular emphasis must be laid on the significance of studies of such scientific problems as the peaceful economic competition between socialism and capitalism, and the economic competition between the USSR and the USA.

In the field of the history of economic thought, Soviet economists must concentrate their attention on the Marxist-Leninist stage of development of economic thought both in the USSR and in the lands of people's democracy, and in other countries. In the field of the history of the national economy, the work of economists must, in the first place, be directed to a study of the history of the socialist reconstruction of the national economy, socialist industrialization, production cooperation in agriculture, and the development of socialist planning.

The very extensive sphere of problems facing our science of economics demands that a number of very serious organizational measures be taken, primarily by way of expanding the network of research institutions in the field of economics.

The Soviet Union has become one of the greatest industrial countries. At the same time, we have no special institute for investigations into industrial economics. The subject area of the Institute of Economics and Organization of Industrial Production recently established in Novosibirsk is, to a considerable degree, local and regional in nature, and the Institute is specializing in problems of organization of the industrial enterprise. It is in place to remember that during the 20's, the VSNKh alone had two large

institutes on industrial economics. Moreover, there was a network of institutions and laboratories of industrial economics in a number of oblasts.

In order to elaborate problems of engineering economics, it is necessary, first of all, to found an institute on the economics of the fuel and power industry. It is also time to organize a network of specialized workshops in engineering economics, specialized institutions in production economics, in the various oblasts (for example, institutes of petroleum industry economics in Kuibyshev and Baku).

The Soviet Union has no Institute of Scientific Statistics, while such institutions exist in virtually every other country of the world. The establishment of an Institution of Statistics and Demography must be treated as a problem requiring immediate solution. It is necessary to perfect a system of reporting by the government, and of statistical methods. This will make possible more profound scientific investigations of the quantitative aspect of economic and social processes of the upbuilding of communism so as to discover contradictions and disproportions promptly, as they arise in the development of the national economy. In the past, Leningrad had a special institute of demography, which carried out necessary and important investigations. There was also the All-Union Society of Marxist Statisticians, which played a major role in the formation of Soviet statistical methodology.

The development of the lands of socialism and the reinforcement of their mutual economic ties dictate the necessity of the organization of a special institute devoted to the world socialist system of economy.

The higher education institutions have to be involved in developing this network of institutions and workshops in scientific economics. The present isolation of the skilled personnel of the universities from scientific research is completely impermissible. Fundamental changes have to be made in the organization of investigations into scientific economics. In a number of cases, our scientific institutes have become auxiliaries to publishing houses, and are engaged in the preparation of popularized works. Often, these works merely rephrase generally-known scientific propositions, and they lack new scientific facts and conclusions, and set forth old scientific propositions in dogmatic fashion. Scientific personnel in economics must be orientated upon the creation of new primary scientific values by the study and creative generalization of the experience of our socialist construction. A most important responsibility of our scientific institutes and engineering economics laboratories must be planned, collective scientific work in a more profound study and generalization of new phenomena and economic facts of the development of the national economy. In place of the elaboration of numerous purely individual themes, which are like isolated farmsteads standing outside a village, it is necessary to get major collective scientific investigations under way, in which truly creative personnel of young scientists in economics will be trained and developed. The results of such investigations would be generalizations, for example, in the field of the theory of socialist expanded reproduction, the theory of planned prices, the theory of estimates and criteria for the national economy, the theory of proportions in the national economy, etc.

The collective scientific investigations made by the government must envisage the elaboration of extended primary materials on the economic activities of factories, plants, collective farms, state farms, civic and commercial enterprises. Without the collection and elaboration of the results of primary observations, without independent selective, profound scientific elaboration of the data of reports collected by government statistical institutions, it is

impossible to assure the carrying out of truly scientific investigations. It is impossible to elaborate complex economic problems on the basis of the "general public statistical ration" — the summary publications of the Central Statistical Administration of the USSR. The collective investigations we have discussed should systematically result in publication of annual economic reviews and analyses of the status and development of our national economy and its individual branches. The publication of economic annuals, as well as of annual series of collective and individual monographs on all scientific problems covered in the plan must, in our opinion, become an obligation to the government on the part of our economic institutes and laboratories. Publications of this kind will at the same time serve as scientific information on the results of these various investigations.

Collective government investigations may be undertaken, for example, in determination of the cost of production, in investigation of planned prices, the economic efficiency of capital investments and the introduction of new equipment, on the balances of inter-branch and inter-district production ties, the compilation of hypotheses with respect to economic structure of socialist society in a longer range perspective, of the economic budget of the USSR, etc. A number of economic investigations may and must be organized in a fashion analogous to the manner in which we set up our investigations into atomic energy and rocket technology. The secret nature of these studies did not prevent outstanding economic results from being obtained, we know.

There is need for change in the organizational structure of our scientific institutions so as to enable them to correspond fully to the elaboration of the scientific problems called for in the plan. The structure of scientific institutions must be completely subordinated to investigation of problems of the present day, and must be made more flexible. It must facilitate the development of the creative collective scientific work of specialists in various branches of the social sciences, working on a single problem, in place of the existing structure of scientific institutions, it is necessary to set up a new structure in the form of mobile creative teams and associations. The work of such collectives should be directed and coordinated by councils on scientific problems. The coordination of scientific investigations must be made not in the form of administrative approval of unified plans in the field of science, but on the basis of complex joint investigations and correctly posed scientific information. In particular, it is necessary to return to the practice under which the plan of economic investigation provided for a scientific review of the literature, and the entire investigation was accompanied by a carefully compiled scientific bibliography.

In order to elevate Soviet economic science to a new and higher level, a proper orientation of scientific personnel toward creation of new primary scientific values is essential. What is needed is a bold creative generalization of the practical experience of the upbuilding of communism, the organization of collective scientific works of state importance on the theoretical and methodological servicing of practice, particularly in the field of the revelation in scientific rationalization of the perspectives of our economic development.

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D. Karpukhin:

Electrification of the National Economy and Increase in the Productivity of Social Labor

The Soviet Union's entry into the period of all-out up-building of a communist society presupposes a further upsurge in the productivity of social labor which is, in accordance with Lenin's famous expression, the most important and fundamental factor for the victory of a new socialist system. Upon the degree of completeness to which the vast resources for the growth of the productivity of social labor available in all branches of the socialist economy are used depends the solution of the most important problems of the present day: creation of the basis for communism in material technology, further strengthening of the country's economic and defense capacity, and simultaneously, an ever fuller satisfaction of the rising material and spiritual needs of the people. The rates of growth, and the level of productivity of labor, determine to a considerable degree the periods of time required for fulfillment of the major economic problem of the USSR — that of overtaking and surpassing the most advanced capitalist countries in production per head of population.

"Realization of the plans of development of industry, agriculture and transport, and fulfillment of the construction program in the upcoming seven-year plan," Comrade N. S. Khrushchev noted in his speech at the 21st Congress of the CPSU, "are possible on the condition of a substantial rise in the level of technology and an increase in the productivity of social labor — the major sources of expanded socialist reproduction and accumulation, the foundations of the upsurge of the living standard of the people."

As we know, from the social point of view, the concept of labor productivity is not exhausted merely by saving of living labor. Increased productivity of social labor lies in reducing the total sum of both concrete and abstract labor embodied in the product. An increase in the productivity of social labor is determined both by the saving of social labor by the economy in utilization of the means of production, in improvement of the structure of the entire social product, and specifically by direct distribution of available labor resources through branches of the national economy, by rational distribution of productive forces across the country's territory, and by other highly complex circumstances. "From the social point of view," wrote Karl Marx, "labor productivity rises as economy thereof rises. The latter includes not only economy of the means of production, but elimination of all useless labor." (1) The foundation of the growth in the productivity of social labor is provided by technological progress in all branches of the national economy: mechanization and automation of production processes, growth in the availability of energy to labor, broad introduction of chemical methods of production, and of chemical materials, etc. Electrification is a most important link in technological progress. It is an essential condition for realization of mechanization and automation, for the intensification of technological processes, and the introduction of chemical methods and products into production. The advantages of electric power

over other forms of energy lie in the fact that it may readily be transformed into other forms of energy, makes it possible to provide maximum precision and intensity of technological processes, is characterized by economy in production, transportation and application, and also by comparative simplicity of control. The introduction of electricity into production as the major form of energy creates conditions for the maximum efficiency of utilization of natural resources, for the development of new forms of production and of products, and facilitates rational distribution of the forces of production across the territory of the country, introduction of the most progressive forms of organization and improvement of the conditions of labor.

Under present conditions of the development of technology, the supply of electricity to labor is a most important element in the means of production. The rise in the availability of electricity to labor, and expansion of the sphere of application of electricity in production are equivalent, in their influence upon the development of the productive forces, to perfection of the tools and objects of labor. In this connection, in our opinion, the proposal of Comrade Kronrod to isolate the power supply to labor as a third component of the means of production, alongside of the tools it uses and the objects of labor, is deserving of consideration. (2)

The current seven-year plan is a decisive stage in realization of the Leninist idea of all-out electrification of the country. In 1965, the annual production of electric energy will attain 500-520 billion kwh as against 233 billion kwh in 1958. The realization of this program will make it possible to carry out most of the job set forth in Comrade N. S. Khrushchev's speech at the anniversary session of the Supreme Soviet of the USSR — that of attaining an output of about 800-900 billion kwh of electric power within approximately 15 years.

In order to achieve the objectives of the seven-year plan in the production of electrical energy, approximately 58-60 million kilowatts of new capacities will be installed and placed in operation in the years 1959-1965. This is about 35 times as great as the program of installation of electric power capacities envisaged by the GOELRO Plan, and is approximately as much as was placed in operation by England, France, and Western Germany during the entire history of their economic development.

The growth in the production and consumption of electrical energy will make it possible significantly to increase the efficiency of the processes of production in all branches of the economy. In addition, the directions of development set for electric power itself during the seven-year plan are such as would correspond to the maximum degree to the objective of increasing the productivity of social labor. As we know, the seven-year plan envisages priority construction of thermal power plants utilizing cheap coal, natural gas and heavy oil. This will make it possible to win

time in the economic competition with capitalism, and rapidly to obtain a maximum increase in the production of electricity. The major projects of new electric power construction during the seven-year plan are high-capacity steam plants in the 1-2.4 million kw category. The construction of such plants is only one half to one third as costly as that of the construction of hydroelectric plants of the same capacity, and takes only one third to 40% as much time. Merely by changing the structure of construction in the field of electric power, our country will obtain, with the same volume of capital investments, 10 million kw of additional power, which is equivalent to a saving of 20 billion rubles.

54% to 63% of the total cost of production at thermal power plants is the costs of fuel. In this connection, reduction in the unit expenditure of fuel per electric power production is one of the most important directions to be followed in reducing its cost, and reducing the expenditure of social labor. Technical progress in thermal electric power production will make it possible to reduce the expenditure of fuel, in conventional units, per kwh of electric power, from 820 grams in 1928 and 457 grams in 1957, to 395 grams in 1965. This will mean a saving of tens of thousands of tons of fuel.

The change in the structure of consumption of fuel by electric power plants will have a major influence upon reduction in the cost of electric power in the seven-year plan. The share of petroleum and gas in the fuel balance of electric power plants will rise to 29.5% in 1965 as against 16.6% in 1958. In 1957, the cost of petroleum (calculated per unit of conventional fuel) was only a little more than a quarter as great as that of coal, and only 1/13th of that of gas. The changes made in the fuel balance of electric power plants will make possible a significant reduction in the cost of production of electrical energy. Utilization of gas will considerably increase the efficiency of boiler units. There will also be a significant reduction in the consumption of electrical energy for the needs of the plants themselves, and operating personnel will be reduced by 15% to 20%.

The rates of growth of the Soviet electric power industry will, during the seven-year plan, considerably exceed the rates attained by capitalist countries, including the USA. In the course of five years (1953-1957), the average annual rates of increase in electric power (without expenditures for the needs of the electric power plants themselves) came to 11.6% in the USSR, while the figure for the USA was 8.6%. In this connection, it should be observed that the electrical power industry of the USA grew, in the post-war years, at rates substantially exceeding the rates of increase in the production of other types of industrial goods. However, the last few years have seen a reduction in the rates of installation of new capacities and in the rate of increase of electric power production in the USA. Thus, the rise in installed capacity in 1956 was 5%, and in 1957 6%, as compared to an annual rise of 10% to 15% during the first years after the war. The increase in the production of electrical energy in 1957 was 4.5%, while in 1958 it remained at the level of the preceding year, while the average increase for 1953-1957 had been 8.6%. From 1959 to 1965, the average annual increase in electric power production of the USSR will be 12%. Moreover, each percentage of increase of electric power production will be 4,330,000,000 kwh in 1965, as against 2,140,000,000 kwh in 1958 and 800,000,000 in 1950.

In the course of the seven-year plan, the Soviet Union will draw up close to the USA in the absolute volume of increase in annual production of electrical energy. Whereas, from 1953-1957, the absolute average annual rise in

electricity produced in the USSR was 17.49 billion kwh, while in the USA it was 50.4 billion kwh, in the years 1959-1965 it will attain 41 billion kwh, which is 80% of the contemporary rise in the USA.

The enormous growth in the output of electric power will lead to a substantial increase in its consumption per head of population, i.e., it will create conditions for increasing the supply of electricity, and consequently the productivity of labor of the personnel of socialist production, and will permit a more extensive utilization of electricity in everyday life, which will reduce the expenditure of labor in housework. In 1913, production of electric power in our country per head of population was 1/13th of that in the USA. During the years of Soviet power, the position has changed fundamentally. In 1957, the average annual rate of production of electric power in the USSR was smaller than that in the USA by a factor of 4.3. By 1965, the production of electric power per head of population will reach approximately 2,300 kwh as against 1,028 in 1957. As a result of the fulfillment of the seven-year plan, the USSR will overtake Great Britain in production of electric power per head of population (2,147 kwh in accordance with 1957 data), will substantially surpass that of France (1,314 kwh in 1957) and will approach the USA.

In examining the course and perspectives of economic competition of the USSR with the USA in the field of electric power and in increasing the availability of electricity to labor — the foundation of increase in its productivity — it must be borne in mind that the socialist economic system provides for a much more rational utilization of available sources of electricity. Thus, whereas the USA exceeds the USSR by 330% in production of electricity per head of population, it exceeds the USSR in labor productivity in industry by only 100% to 150%. With further progress in the development of the Soviet economy, the spread in the level of labor productivity will be reduced more rapidly than the lag of the USSR behind the USA in production of electrical energy. Analysis of the level of production of electric power per head in the USA requires that due attention be given to economically unjustified excesses in electric power consumption, particularly in the non-productive sphere. In 1957, of the total amount of electric energy operated for general public consumption in the USA, 50.9% was released to major industrial enterprises, 17% to commercial enterprises, 26.3% for household needs, 2% for agriculture, and 0.7% for the railways. The remainder of electric energy production was employed for lighting streets, highways and other non-productive needs. At the same time, we must not underestimate the economic significance of the lag on the part of the USSR in the production of electric power. Although the structure of power consumption in the USA cannot serve as an example for a socialist economy, the consumption of electric power outside the sphere of material production will doubtless increase in the USSR during the period of all-out upbuilding of communism. This is a most important factor in saving the labor of society, in improving conditions of life, and the welfare of the population.

A guarantee of the inevitable triumph of the USSR in the competition with the USA in the field of electrical energy is provided by the headlong rates of increase in the production of electric power, and the continuous rise in the absolute annual rates of increase of production, which are borne witness to by the following figures shown on page 22.

As may be seen from the table, the average annual increase in electric power output from 1959 to 1965 was more than eight times the volume of output in 1928. The value of each percent increase in power output during the seven-year plan is more than 46 times as great as the absolute

Periods	Years	Production of electric power (in billion kwh)	Average annual increase in electricity output		Value of 1% increase (million kwh)	Production of electric power per head of population (kwh)
			Percentage (in billion kwh)	Rate of increase (percentage)		
First five-year plan	1929	5.0	2.1	28.2	50	40
	1932	13.5				84
Second five-year plan	1933	16.4	4.5	21.7	135	100
	1937	36.2				218
Three years of third five-year plan	1938	39.4	4.0	10.1	362	233
	1940	48.3				252
Fourth five-year plan	1946	48.6	9.6	16.1	433	283
	1950	91.2				503
Fifth five-year plan	1951	104.0	15.8	13.3	912	564
	1955	170.2				862
Three years of sixth five-year plan	1956	192.0	20.9	11.1	1,706	950
	1958	233.0				approximately 1,140
Seven-year plan (targets)	1959	258.0	41	12.0	2,300	approximately 1,180
	1965	500-520				2,300

value of 1% increase during the first five-year plan and 2.6 times as large as during the fifth five-year plan. In 1965, electric power output per head of population will be 57 times as great as in 1928, and nearly ten times as great as in 1940.

As hitherto, the major consumer of electric power during the seven-year plan will be industry, although the share thereof in electricity consumption will diminish somewhat in connection with the greater emphasis on the rates of electrification of agricultural production and transport. At the present time, industry utilizes about 69% of the electrical energy produced in the country, and in 1965 it will consume about 66%. The high level of consumption of electrical energy in industry is due to the role of this leading branch in the national economy of the USSR.

The rates of increase of electric power output and the consumption thereof in industry will overtake the rates of increase of industrial production and labor productivity. While the gross production of industry will rise 80%, and labor productivity will increase 45% to 50%, the production of electrical energy in the country will rise 100% to 120% during the seven-year plan, and the consumption of electrical energy in industry by 120%. This ratio reflects the objective tendency of technological progress under conditions of large-scale machine production, and is a direct condition for increasing the supply of equipment available to labor.

The ratio between the development of the base of the national economy in electrical energy, and the growth in volume of industrial production, as well as the increase in labor productivity, is among the most important proportions to be maintained in the national economy. The establishment of proper ratios in the dynamics of production of electrical energy and output of gross production in industry and in other branches of production, with allowance for the concrete historical peculiarities of the development of the national economy, is always a subject of special attention on the part of the Party and the government. A striking instance of this is the Lenin plan for electrification of the country (the GOELRO plan) and the subsequent decisions of the Party and the government directed to the most rapid development of electric power production as one of the major

branches of the national economy. With an increase of 36 times in the gross production of industry from 1913 to 1958 and of 330% from 1950 to 1958 the production of electrical energy increased 120 times and 380%, respectively. The experience of the development of the Soviet economy teaches us that a priority rate of development of electric power production serves as the foundation for growth in labor productivity. Thus, in the fifth five-year plan, when the gross production of industry and the output of electric power increased equally (85%), the plan targets for increase in labor productivity were not fulfilled.

A most important index of the degree of productive consumption of electrical energy is the amount of electricity available to labor, i.e., the ratio between the amount of electrical energy employed in production to the number of workers or the quantity of working time worked. This ratio expresses a saving of heavy physical labor, the introduction of new machines and technological processes resulting in increase in power consumption, improvement in the organization of labor and production making for reduction in the number of persons employed. Consequently, the amount of electricity available to labor reflects the influence of all the factors determining the level of labor productivity.

The following data on annual consumption of electrical energy and annual production per worker in various branches of industry in the USSR in 1956 and the USA in 1954 testify to the direct connection between labor productivity and the level of power available. (See table on top of page 23.)

In the USSR, the lag behind the United States in output per worker is particularly great in the production of artificial fiber, and in the cement, brick, cotton textile, and oil refining branches of industry, i.e., in those branches where we also lag in the amount of electricity available to labor. The dynamics of available electricity, when compared to the rates of growth of productivity of labor in Soviet industry during the period 1913-1958, are characterized by the following data. (See table on bottom of page 23.)

Thus, we see in the USSR rapid rates of growth of the supply of electricity available to labor, which are overtaking

Branch of Industry	Annual Electric Power Consumption Per Worker in USSR Industry, as % of USA	Annual Output per Worker in USSR, as % of USA
Ferrous metallurgy (pig iron, steel, rolled steel)	44.3	49.1
Coke	57.6	49.1
Petroleum refining (yield of light products)	33.1	43.4
Machine tool (metal-cutting machine tools)	66.7	74.4
Cement	30.5	35.5
Brick	31.0	43.5
Paper and pulp (pulp, paper, card-board)	43.2	42.1
Cotton textiles	28.5	37.7
Wool	34.2	45.1
Production of artificial fiber	29.8	18.5
Meat	44.3	53.2

the rates of growth of labor productivity. However, in the level of electricity available to labor in industry, our country is still behind the United States by a factor of approximately 2.9. During the current seven-year plan, this spread is to be substantially reduced. Whereas from 1952 to 1958, the electricity available to labor rose 60%, from 1959 to 1965 it will almost double.

The index of available electricity is of the greatest importance for a description of the dynamics and level of labor productivity. This index should, in our opinion, include the entire volume of electric power consumed for purposes of production, not being limited merely to the proportion which is used as a source of motive power, as is proposed by certain economists. (4)

The power of the motors serving working machines has risen more than 19-fold from 1928 to 1956, and the coefficient of electrification of power-uprate of processes has risen from 64.9% to 89.1%. In the manufacture of machinery, the power of motors per metal-cutting machine tool was 1.2 horsepower on the average in 1913. At the present time, the average power of the motors of machine tools, and of machines in the major departments of plants in the industry manufacturing heavy machinery, is 15 horsepower, and the installed capacity of the motors of large metal-cutting machine tools exceeds 200 horsepower. In the coal industry, the power of motors serving working machines multiplied 22 times from 1928 to 1956, in heavy industry 17 times, in light industry 5 times, in the food industry 11 times, etc.

In a number of branches of industry, electrical engineering has become the most important component of the

technological process. Its role is particularly great in such branches of industry as the chemical, and non-ferrous metallurgy. Whereas, prior to the revolution, electrical energy was not employed in technology as such, today 26.2% of the total utilization of electricity by industry is in technological processes.

Soviet industry possesses enormous resources for increasing further the level of power available to labor, both in the field of improving the electrification of processes requiring motive power, and particularly in the field of introducing the most progressive technology based on direct application of electric power to the materials being processed (the electro-chemical and electrolytic processes, electric spark processing of metals, high frequency hardening and drying, etc.). In a number of branches of industry, electrical technology has not received the development it should have. This is evident from the data of the following table, which characterize the dynamics of electrification of processes requiring motive power, and the utilization of electrical energy for technological purposes in the industry of the USSR. (See table on page 24.)

In all branches of industry (except for forestry), the years of the five-year plans saw electricity become the major form of energy used to supply power. The further technical progress to occur during the seven-year plan will result in a significant increase in the consumption of electrical energy for process procedures as well. This will be accounted for mainly by the rapid development of the chemical industry and the metallurgy of the non-ferrous and rare metals provided for by the control figures. According to available data, the consumption of electrical energy per

	1913	1928	1940	1950	1956	1957
1913=1						
Electricity available to labor	1.0	2.0	8.0	10.0	19 approx.	20
Labor productivity	1.0	1.2	4.2	5.8	9	9.5
1928=1						
Electricity available to labor	—	1	4.0	5.0	9.5	10.0
Labor productivity	—	1	3.4	4.7	7.3	7.7

	Power of motors serving working machines (in millions of kv)			Percentage electrification of powered processes (relative to power required)			Consumption of electricity for technological purposes (as percent of total consumption)		
	1928	1940	1956	1928	1940	1956	1928	1940	1956
All industry	3.0	16.9	57.7	64.9	83.8	89.1	2.0	18.1	26.2
Including:									
Manufacture of machinery and metal working	0.5	4.6	14.2	85.3	91.8	98.3	3.3	21.5	33.0
Ferrous metallurgy	0.5	3.1	7.8	51.3	75.1	86.3	2.3	26.0	26.1
Coal	0.3	1.5	6.1	73.7	95.8	99.2	—	0.8	2.0*
Petroleum extraction	0.3	0.5	2.1*	83.8	82.4	79.4*	—	0.7	0.9*
Petroleum refining	0.02	0.2	0.9*	68.4	66.0	71.7	—	1.1	1.2*
Chemical (including mineral chemicals) and the rubber-and-asbestos industry	0.1	1.2	3.3	73.4	92.2	97.8	15.7	21.3	31.7
Lumber industry (lumbering)	0.3	—	2.5*	11.7	—	21.7*	4.9	—	6.2*
Building materials, and porcelain-and-ceramic industry	0.1	0.8	2.8*	73.1	87.1	95.4*	0.1	2.3	3.6*
Light industry	0.5	1.0	2.4	62.4	85.1	96.0	0.1	1.2	1.6*
Food industry	0.3	1.2	3.5	24.7	62.5	80.7	0.5	2.1	3.1*

* 1955

ton of product is as follows (in thousands of kwh): 18-22 for aluminum, 21-24 for magnesium, 45-50 for titanium (with consideration of magnesium and chlorine obtained as byproducts), 100-120 for the zirconium metals, over 60 for lithium, 150 for synthetic rubber (including byproducts), 20 for acetate rayon (including byproducts), 5-7 for viscose rayon, 3.5-4 for synthetic leather, 3 for cellophane, 2.5-3.3 for calcium carbide.

The accelerated development of chemistry and non-ferrous metallurgy — branches based primarily upon electrical technologies — is a most important factor in changing the structure of industrial production in the USSR during the seven-year plan. These branches, which increase the list of materials employed in industry, will substantially expand the production capacity of industrial equipment. The development of the production of alloys of non-ferrous and rare metals, and of modern forms of synthetic materials, will make it possible to create and to introduce the very latest of high-production machines and mechanisms into the national economy on a large scale, as well as progressive process procedures assuring a sharp increase in labor productivity. Replacement of natural types of raw materials by synthetic types which are more economical in terms of production, processing and utilization as finished products, will yield an enormous saving of labor for society. It is enough to say that a ton of polymer resins used in the production of cables substitutes for up to four tons of so expensive and critical a material as lead. As the chemical industry and the technology of production develop in the synthetics field, they become cheaper rapidly. For example, the cost of such a polymer as kapron was cut by three fourths from 1950 to 1957.

The significance of electrical processes for the improvement of technology and for economies in production is not limited by the fact that it is the basis for the development of a number of new highly-efficient branches of industry. The application of electrical energy for technological purposes in branches in which it is now only used as a source of motive power, will also provide a significant economy of labor and material wealth. Calculations show that, for

example, the electrical metallurgy of pig iron requires between 3 and 4 thousand fewer workers per million tons than when it is produced in the usual fashion in the blast furnace. During the seven-year plan, the electrothermic and electrical spark methods of processing materials in the machinery-manufacturing industry will undergo further expansion, and technological applications of electrical power will also expand in other branches of the processing industry.

Further electrification of the power supply to industry during the seven-year plan will proceed chiefly by application of the most modern types of electrical drives — individual and multi-motor types, this being an essential for the introduction of systems of automatic monitoring and control. The use of progressive types of electric drives will make it possible to create and to employ in industry on a large scale the latest models of high-output multi-unit machine tools and automatic lines, and to complete complex mechanization, as well as automation in a number of fields.

During the years of Soviet power, the source of energy employed in agriculture has changed fundamentally. Considerable successes have been attained even in electrification of this branch of the national economy. Prior to the revolution, according to data for 1916, there were 80 electric power plants having a capacity of about 2,000 kw in rural areas, and they produced a little more than one million kwh of electric power. In 1958, there were 1,000 rural electric power plants in the USSR with a capacity of 4.1 million kw, and consumption of electricity in the countryside had risen to 6.4 million kwh.

Electrification, as well as the provision of equipment to agriculture in general, has progressed with particular rapidity in the five years since the historic September, 1953, Plenum of the CC of the CPSU. During this period, as many collective farms were provided with electricity as had acquired it during all their preceding history. In 1958, electric power was available to all machine and tractor stations, to 96% of the state farms as against 90% in 1953, and to 44% of the collective farms as against 22% in 1953.

The headlong rates of electrification have been a major factor in increasing the supply of energy available to personnel in farming, which increased by more than 130% from 1951 to 1958. In the state farms, the availability of energy to labor increased nearly 160% during the same period. As a result of the measures taken by the Party, the productivity of labor in the agriculture in the USSR from 1954 to 1958 rose 47% as compared to the preceding five-year plan (1949-1953), and 36.5% in the state farms. It must, however, be observed that the overwhelming bulk of the electrical energy employed in agriculture is thus far utilized chiefly for illumination and other public service and household needs, while processes of production have been electrified as yet to only an inadequate degree.

The present seven-year plan envisages the carrying-out of major undertakings in the electrification of agriculture so as to complete the provision of electricity to virtually all farming enterprises by the end of the seven-year plan, and sharply to increase the consumption of electrical power for purposes of production. The consumption of electrical power in agriculture is to multiply approximately four-fold in the years 1959-1965. The share of agriculture in the general consumption of electrical energy is to rise from 2.8% in 1958 to 4.6% in 1965. This is one of the factors involved in increasing labor productivity in the collective farms by approximately 100%, and in the state farms by 60% to 65%.

The following examples will indicate the economic effect of the employment of electrical energy as a motive force and for other purposes of production in agriculture. The milking of cows by electricity doubles the productivity of labor of milkmaids, and electrical shearing of sheep trebles labor productivity. The utilization of an electric drive on a feed-preparing machine increases its output three to four times, and reduces the number of personnel required by a factor of 1.5 to 3.

Electrification of agriculture leads not only to an increase in labor productivity in the collective and state farms, but makes for improvement in socialist relationships of production, approximation of collective farm and cooperative property to general public property, and gradual erasure of the boundaries between them. The speech by Comrade N. S. Khrushchev at the 21st Congress of the CPSU notes that "in connection with the development of the electrification of agriculture, the mechanization and automation of production, there will proceed to an ever increasing degree the combination and the merger, in its own unique fashion, of collective farm-owned means of production with those publicly owned and state owned, and agricultural labor will gradually be transformed into a variety of industrial labor."

The seven-year plan proposes to electrify railways of a total length of about 20,000 kilometers. The percentage of total consumption of electricity going to railway transport will rise from 4.1% to 5.9% during the seven-year plan. The program of electrification of railway transport set forth in the seven-year plan is twice as great as the volume of work on installation of electrical traction carried out during all the previous years of Soviet government. The length of electrified railway lines will approximately treble, reaching about 30,000 km, or 20% of the total length of line in operation. In 1965, about 45% of the total freight hauled by the railroads will be hauled by electric traction.

The utilization of electric power in railway transport will have serious influence upon increasing the productivity of social labor. The conversion to electric traction will double the traffic capacity of the railways, and this will yield enormous savings in capital investments that would

otherwise be required to handle the rising volume of freight if steam traction were retained. Electrification of railway transport makes for stable operation of railway lines, increases the speed of train movement by nearly 50%, substantially reduces the costs of freight haulage, etc. The cost of haulage per reduced ton-kilometer is about one half as much with electric traction as with steam.

The conversion of trains to electric traction will make it possible to cut fuel consumption for freight haulage 3- to 4-fold. The efficiency of a steam engine is about 4% to 5%. If we consider that railway transport takes as much as one quarter of all the coal mined in the country, it may be reckoned that the energy liberated in the combustion of about 100,000,000 tons of coal yields no useful effect. The utilization of electric locomotives will increase the efficiency of the system embracing the power plant, the power lines, and the locomotive to 17-18%, and substantial possibilities for a further increase in this figure remain. During the seven-year plan, the saving of fuel resulting from introduction of electric traction will be about 150 million tons of conventional fuel units. Approximately 30 billion rubles will be saved in operating expenditures on the railroads, and this is considerably greater than the capital investments to be made in electrification of the railroads from 1959 to 1965.

The utilization of electric locomotives eliminates the idle periods inevitable with steam for the taking on of fuel, water and cleaning the boiler, and improves the working conditions of the servicing crews, etc. Electrical traction makes it possible to electrify the villages, collective farms, machine and repair stations, and state farms adjacent to the line.

The productivity of the labor of society during the seven-year plan will be substantially affected by the rationalization of distribution of the country's productive forces, and primarily by accelerated development of the economies of the eastern districts. Electric power is the most important foundation for the manufacturing complexes being set up in the eastern portion of the country. The production of electric power in this area will increase from 230% to 250%, the increase for the nation as a whole being 110% to 120%, while the increase in the production of electric power will constitute about 35% of the total increase for the USSR as a whole.

The eastern districts of the country have enormous resources of fuel and power, capable of being involved in the economy with lower expenditures of labor and funds than, for example, in the districts of the center and the Urals. Calculations show that whereas coal extracted from mines in the European portion of the USSR costs 90 to 120 rubles per ton of conventional fuel, coal recovered from open-cut mines in Kazakhstan (at Ekibastuz) costs 30-40 rubles, while in the deposits of eastern Siberia it costs 9 to 10 rubles. Consequently, the production of electric power at a new steam station in the European portion of the country costs 4.5 to 5 kopecks and more, in Kazakhstan 2 to 2.7 kopecks and in eastern Siberia 1.2 to 1.5 kopecks.

The capital investments required for recovering one ton of coal in the deposits of eastern Siberia is less by a factor of 2.5, and in the Kuzbass is less by a factor of 1.5 than in the Donbass. Expenditures for the production of coal in the Kansk-Yenisey and Irkutsk-Chermkhovo deposits are less by a factor of 3 to 5 than in the other major coal areas of the country. The productivity of labor at cuts in these basins is about 5 to 6 times as high as when coal is derived from mines. According to available calculations, the average monthly labor productivity at the Irsha-Borodino cut can be brought up to 2,000 tons, and the cost reduced

to 2 and 1/2 rubles per ton of coal. This will make it possible to reduce the cost of a kwh of electricity at the powerful thermal station planned here from 1.39 kopecks to 0.8-0.9 kopecks.

The haulage of coal to distant districts, which do not have fuel and power resources of their own, frequently increases its cost. Thus, the cost of high-calorific Kuznetsk coal (6-6.5 thousand kcal) doubles upon delivery in the Urals. Long hauls of low-calorific power coals are even less rational. For example, coal of 40% ash content has been shipped to the Urals from Ekibastuz in recent years. The extraction of coal at Ekibastuz is done by the open-cut method, and a ton costs only 25 rubles, but haulage 1800 km to the power plants of the Urals costs 37 rubles 65 kopecks per ton, which means that the cost is raised 150%. These data testify to the high significance for saving the labor of society involved in the construction of large-scale power plants at places where cheap coal is produced, as is projected in the seven-year plan.

The eastern districts possess enormous perspectives for hydroelectric construction. During the seven-year plan, the world's largest power plant, the Bratsk hydroelectric plant, of more than 3.6 million kw capacity, will go into operation, and work will progress in construction of the 4.2 million kw hydroelectric plant at Krasnoyarsk. The production of electric power at the hydroelectric plants on the Angara and Yenisei will be less, by a factor of 2.5 to 3.5, than at the hydroelectric plants on the Volga and Kama. The cost of electricity at the Krasnoyarsk hydroelectric plant will be only 0.48 kopecks per kwh, according to the plan, and therefore the lowest cost in our country.

In the years 1959 to 1965, unified systems of power lines will be established in the European portion of the USSR (installed capacity 50 million kw by 1965), and in Central Siberia, and unified power systems will also be established in districts of the northwest and west, the Transcaucasus, Kazakhstan, and Central Asia. The development of unified power systems will make for rational distribution of loads, and, in the long run, for economy of social labor.

The comparatively low cost of transmission of electrical energy will, with the creation of a single power system for the USSR, permit utilization of electric power developed by the hydroelectric stations of the Angara-Yenisei series to supply consumers in the European portion of the country. Stations to be built to use the cheap coals of Kazakhstan and Krasnoyarsk Krai will also be able to be used for this purpose.

The introduction of electrical energy will have a serious influence upon the redistribution of the labor supply, benefitting the producing of material goods, and this will serve as an important factor in increasing the productivity of the labor of society. In our country, the share of the population capable of working that is engaged in the branches of production of material goods is exceedingly high. In 1957, 85% of the adult population of the USSR were engaged in the production of material goods, and 15% in the unproductive sphere. At the same time, in the United States, according to official American statistics, of 51.5 million

workers and office workers in the national economy, excluding agriculture, 26.9 million persons were engaged in non-productive branches (commerce, finance, services, government institutions), or more than half. In 1956, there were 7 persons employed per thousand of population in the Soviet Union in agencies of government and business administration and in membership societies, whereas in the United States, 42 persons in every thousand were engaged in Federal and local government agencies.

The development of electronic equipment opens great possibilities for further reduction of the administrative apparatus. The possibilities still remaining for reduction of this apparatus are very great. Thus, for example, in the Saratov Economic Council, there are 136 administrative and managerial personnel in the offices and apparatus of the Council per every thousand workers, in Dagestan there are 175, in Kherson there are 107, in Lvov there are 112, etc.

Approximately one third of the administrative-and-managerial apparatus consists of bookkeeping and accounting, statistical, and office workers. The function of these categories consists fundamentally of collecting and processing information — operations readily subject to mechanization on electronic computing equipment. Preliminary data indicate that mechanization of calculating operations based on rapid expansion of the production of all types of electronic calculating machines would free up to 200 thousand persons engaged in accounting, and would reduce costs for maintenance of the managerial apparatus by more than a billion rubles per year.

Thus, examination of only a few of the basic trends in the further increase in the consumption of electrical energy in the national economy demonstrates the enormous significance of electrification in increasing the productivity of social labor. Only on the basis of complete electrification of the country, is it possible to assure scientific and technological progress in all branches of industry and agriculture, to complete the complex mechanization and automation of all process of production, to achieve the fullest possible utilization of new sources of energy, of new synthetic and other materials, and to speed solution of the fundamental problems of creation of the foundation for communism in material technology.

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D. Meyerzon:

Technical Progress and Improvement in Systems of Wage Payments

In recent years, in connection with the resolutions of the 20th Congress of the Communist Party of the Soviet Union, a great deal of work has been carried out in our country in straightening out the wage system in industry. In this connection, along with widespread production of work quotas based on the capabilities of the machines, and new fundamentals used in the setting of rates, the forms and systems of payment of wages are being improved. These changes are intimately interrelated with the uninterrupted progress of technology, and the qualitative changes occurring in the foundation of industry in material technology. A profound study of the objective interrelationships among forms and systems of wage payments and technical progress and generalization of the experience accumulated in straightening out the system of wages in industry are of major importance for further improvement of organization of the payment to labor in the country's national economy.

As a result of the carrying out of measures to bring about order in the system of payment of wages, significant changes have occurred in the forms and systems of payment for the labor of workers in industry: there has been some reduction in the percentage of pieceworkers in the total number of workers, although piecework has remained the main and dominant form of payment to labor; efficient time-plus-bonus systems of wages have come into wider use; payments to labor on the basis of collective results of work, based on over-all indices of output, have become more widespread; there has been a sharp reduction in the areas of utilization of progressive piecework. There has been a very large-scale conversion to collective bonuses for fulfillment and overfulfillment of production plans. There has been an increase in the number of workers covered by all types of bonus wage systems.

The number of workers on piecework has been cut in virtually all industrial enterprises where new rate-setting systems have been introduced. This reduction has primarily been the result of elimination of fictitious piecework used in some branches of industry as a means of artificial regulation of workers' wages, where the rates had come to lag substantially behind increase in wages. Thus, at the mines of the Donbass (Ukraine), the share of pieceworkers in the total number of workers was reduced from 60% in 1956 to 51% in 1957, whereas in enterprises of the ferrous metals industry the reduction was from 70% in 1957 to 66% in 1958, and at 14 machinery-manufacturing plants where an experiment was made in introducing new wage rates, the reduction was from 71.4% in August, 1956, to 59.3% in September, 1957.

The most significant change in the ratio between workers on piece and time payments has occurred in the reorganization of wage systems in chemical and other industries characterized by strictly controlled technological processes. At the majority of these enterprises, time payment is becoming the dominant form not only for auxiliary workers, but for equipment operators who regulate and control the major production processes.

It is characteristic that under contemporary conditions, time payment to labor is being spread to embrace a portion

of the basic production workers. This is occurring, in the majority of cases, with introduction of the latest in progressive equipment, technology and organization of production (conversion from discontinuous equipment processes to continuous processes, further automation, the development of experimental production, increased quality requirements, etc.). In some branches of industry, primarily where chemical technology predominates, time payment to labor will evidently become the major type in the years immediately ahead. In many branches of industry, enterprises will appear (chiefly experimental in nature, producing single sample products), at which a minority of the workers will be involved in piecework. According to tentative calculations, based on an accounting of the results of the reorganization of wages, the share of pieceworkers to the total number of workers will drop by between 6% and 9% from the first quarter of 1956 to the end of 1960.

A special feature of the improvement of the wage system today is payment to labor on the basis of the final collective results of production. Payment to labor for output of finished products (ton of coal, cubic meter of lumber, cubic meter of concrete, unit product) has become the chief method in recent years in coal and ore extraction, in the reinforced concrete and lumber industries, and on the assembly lines of many enterprises in the machinery manufacturing and other branches of industry.

In the process of straightening out the wage system, there has been a considerable increase in the number of workers shifted to payments in terms of collective results. Thus, the number of workers paid on the basis of team indices per ton of coal loaded in the car, and the number of running meters of drift mine, has increased from 23,700 to 94,100 in the flat and sloping drifts of the Donbass, and their percentage of the total number of pieceworkers has increased from 36.2% to 96.5%.

Important features of the transformations occurring in the systems of wage payments in industry are the expansion of the number of workers paid various types of bonuses, and changes in the nature of bonus payments. Prior to the reorganization of the wage system, a comparatively large number of workers were covered by bonus systems due to the utilization of payments under these systems as a mechanical means of assuring the planned level of wage payments. (1) Introduction of new wage rates did not, however, result in reducing the share of the workers obtaining bonuses in the total number of workers. On the contrary, the percentage of such workers rose from 79.6% in 1957 to 82.4% in 1958, and at the 14 machinery-manufacturing enterprises referred to above it rose from 39.2% to 41.5%.

The change in the nature of bonus payments is expressed in the fact that the index or condition for receipt of bonuses is becoming fulfillment and overfulfillment of the production plan by a crew, section, unit, or shop. Accordingly, there is a reduction in the utilization of progressive piecework systems of payment to labor and of a multiplicity of other bonus systems, which had to a considerable degree been converted into tools for mechanically assuring that the planned level of wage payments was reached. In the mining,

metallurgical and coke-chemical industries, and in the production of building materials, at tire factories and a number of other enterprises of the chemical industry, progressive bonuses have been done away with in the majority of production areas, and collective bonus payment has been introduced for fulfillment and overfulfillment of the output plan. In the Donbass, the share of workers paid by the progressive piecework system has dropped from 42% virtually to zero, and in the 14 plants of the machinery-manufacturing industry from 13.3% to 6%. The progressive piecework system has been maintained in these plants (if we leave out of consideration individual instances of utilization thereof to assure the level of earnings that had come into being) primarily as a temporary measure to eliminate bottlenecks in production. At enterprises of the ferrous metals industry, the use of the piecework-and-bonus system has risen from 8.3% to 44.8% of the total number of workers, and the progressive piecework system has dropped from 42.7% to 6.1% of the workers. In the ferrous metals industry, as in a number of other branches, progressive piecework systems are now used only in individual fields, where it is impossible to establish precise planned goals (for example, in eliminating faults in metal in rolling departments, where the volume of work fluctuates considerably with the quality in the surface of the rolled metal). On the whole, after the reorganization of the wage system, progressive piecework systems will be employed with respect to only a small percentage of the workers of Soviet industry, as against about 33% at the beginning of 1956.

Changes in systems of wages paid to workers are now occurring at such speed and at such scales as was unknown at any time since the thirties (1931-1936). At the same time, they differ substantially from the changes that were made in those years. At that time, the percentage of workers on piecework (particularly progressive piecework) was substantially increased, and a maximum individualization of indices of labor was introduced. At the end of 1936, the organization of forms and systems of wage payments had been established that persisted with comparatively few changes for the next twenty years: 76.1% of all workers on piecework, of whom 41.5% were on progressive piecework. At the time of the reorganization of the wage system in 1956, 77% of the workers were on piecework, of whom 43% were on progressive piecework.

What are the objective reasons for the significant difference in the dominant forms of material incentives to workers in 1931-1936 and at the present time? What is the cause for the need to redistribute industrial workers in terms of the systems of wages by which they are paid after a twenty-year period in which approximately the same ratios persisted as had been established in 1936? The answers to these questions have to be sought in the different levels of technological development and level of perfection of mass production in the 1930's and today, and in their influence upon the forms and methods of organization of labor and production.

Partial mechanization of production processes was typical of the 1931-1936 period. At that time, the percentage of manual and auxiliary operations was quite considerable. Today, all-round mechanization of the major processes in a number of branches of industry is being completed. In the 1930's, machine tools served by single workers dominated, as did mechanized hand tools (the air hammer, the electric drill, etc.). Today, these tools have been replaced in a number of fields by multi-purpose tools requiring crew organization of labor.

In the 1930's, the dominant tendency in the development of the division of labor was the breakup of production

operations and the assignment of specific workers thereto. In the machinery-manufacturing industries, team assembly was replaced by operation-by-operation assembly. Everywhere, the most important jobs, requiring high skill, were separated from work of subsidiary nature (for example, the cutting of coal from the installation of pit props, etc.). The narrow specialization of workers, and the high percentage of jobs done either by a combination of manual and machine labor, or by manual labor alone, was determining in establishing the substantial diversity of skills to be found among workers, and the sharp differences in the productivity of labor of individual workers, depending upon abilities and the intensity with which they worked. This led to a reinforcement of differentiation of wages in accordance with the skills of the workers and the results of their labor.

At the present time, the development of mechanization, and the perfection of continuous methods of production, as well as the distribution of processes occurring in the special types of apparatus, demand to an ever greater degree a new, crew type of organization of labor and of payment thereto, the combination of operations, functions, jobs and skills, and a rise in the need for workers having a broad range of skills, and thus lead to a significant reduction in wage differentials dependent upon skills and the individual results of labor. This process is most clearly seen in the coal-mining industry, where the cutting machine, and now the coal-mining combine, has replaced the air hammer. In accordance with the new nature of the tools of production, there has appeared the need to change the former organization of labor, to create complex producing and shaft-sinking crews, and to introduce payment on the basis of general indices of labor. (2)

In analyzing the substantial differences in the changes that took place in forms and systems of wages in the 1930's, and those now occurring, it is also necessary to take into consideration the rise in the cultural-and-technical level and in the consciousness of the workers during the decades that have passed, and the increasing role of social stimuli to labor.

The experience in organization of wages in USSR industry shows that two factors have very great influence upon choices of forms and systems of wages:

(1) The equipment, technology and organization of production, determining the nature of the production relationships among workers and the substance of their labor functions, and,

(2) The dynamics of the levels of wages of workers paid under various forms and systems of wages.

Within the foregoing, the former factor is fundamental, as it conditions the place and role of the forms of wage payments in the organization of wages. The forms and systems of wage payments determine the indices and methods of material incentives, and the direction thereof. Shifts in the equipment, technology and organization of production condition changes in the sphere of obligations of the workers, the tasks placed before him, the nature of his influence upon the results of the production processes, require corresponding adjustment of the forms of material incentive, and perfection of the wage system.

The forms of material stimuli, and, consequently, the systems of wages, cannot be identical at the different stages of the development of socialist industry, in various branches and at various sectors of production, and even for workers in the same skill who find themselves in differing circumstances in terms of organization of production and available equipment. Thus, when product geometry is inspected by hand with the aid of measuring instruments, it is usually time-and-bonus payment of labor that should be

employed. When this kind of inspection is performed on a mechanical machine, the labor of the inspector approximates that of a machine operator in nature and essence, and therefore the question of paying him on an individual piecework basis may well be posed. Crane operators engaged in delivery of raw materials, other materials and semi-finished products to the work site, are usually categorized as auxiliary workers, and their labor is paid on a time-and-bonus basis, or on an indirect piecework basis. In foundries, where large parts are made, the labor of the crane operator consists of moving the object in the course of the processing thereof, and is therefore part of the production process itself. On these jobs, crane operators are considered as members of the production teams, and are paid on the basis of a straight collective piecework system. Consequently, the use of various forms and systems of payment has an objective basis determined by the conditions of production. The introduction of time wages where the nature of the work requires piece wages usually results in a sharp reduction in productivity of labor, in the development of the need for additional labor force or in failure to carry out plans of production. On the other hand, conversion to piecework of the system of wages paid to workers the nature of whose functions is such that they should be paid on a time basis results in payment based on fictitious indices not having a real value as stimuli, leads to waste of time and money in filling out unnecessary forms, and in some cases to impaired quality of the work done.

The piecework system, which is the major form of payment to labor under socialism, cannot be either the unique or the dominant form for workers of all skills, in every enterprise, and every branch of industry. The degree to which workers are paid on a piece basis is, as experience has shown, a matter of sharp fluctuation in accordance with the specific peculiarities of the equipment, the technology and the organization of production at various branches of industry, and in various sectors of the work. For the same reasons, the degree of application of collective forms of wages and the structure of premium systems cannot be identical under different conditions of production. At the same time, it is necessary to take into consideration the real tendency toward some degree of approximation of the principles on which systems of payment to labor are built in various sectors in differing branches of industry, for example, on conveyor lines in the manufacture of machinery, in light and foodstuffs industries, in the servicing of complex assemblies, in processes conducted within apparatus, on automatic production lines, etc. This tendency is conditioned by the fact that some reduction is occurring in the degree of difference existing in technologies and equipment of production among the various branches of industry.

All-round mechanization and automation of production, the introduction of chemical procedures and the principles of continuous flow of production into various branches of industry lead to the utilization therein of equipment, jigs and fixtures that are similar in their technology, and also to a certain approximation of the technical foundation, the methods of production, and the labor functions of the workers in these various industries. It is machines that do the major process work. The variety of jobs that previously required special habits of manual labor are today ever increasingly being embodied in a variety of performing organs of machines and assemblies of machines, while the workers in the various branches of industry retain only the function of inspection and control of the processes, setup and repair of equipment, and the performance of various types of subsidiary jobs. The degree to which a variety of skills rest on a common technical foundation is increasing. The percentage

of workers belonging to similar "all-round" skills, such as setup men, electricians, electrical assemblers, mechanics, apparatus control men, motor operators, is increasing. The significance of exchange of experience among branches of industry in the field of building up system of payment to labor, which is particularly favored by the reorganization of industrial management on the territorial principle, is increasing.

The significant changes in forms and systems of wages reflect major shifts in the socialization of labor at socialist enterprises, which is occurring with the development of equipment and the organization of production.

The socialization of labor is a complete, multi-sided process. Its important sides are the development of forms of joint labor and the division thereof, an increase in the scale of the means of production controlled and monitored by workers, the ever-increasing regulation of the productivity of the individual worker by social conditions of production, the improvement and simplification of quota-setting and calculation of labor.

Regulation of working time by the equipment itself and by the manner in which production is organized attains its highest level in processes where the time required to make the product is determined by a calculated rhythm of motion of the automatic system of the machines or is predominated by the parameters of chemical reactions. Processes of this kind include the manufacture of mass-production types of ball bearings on automatic production lines, the production of electric power, of sulfuric and nitric acid, or divinyl, ammonia and other chemical products. The major technological work in these processes is carried out without direct physical participation by the worker. His function is reduced to monitoring the adherence to predetermined rigid parameters of production processes, setting up and repairing equipment. In these processes, such evenness of the results of production should be assured, such a stable level of output of products must be maintained that the bulk of the earnings of the workers has to be constant, and based on a time system of wages. Time payment on such jobs is conditioned by the high level of socialization of labor. It differs significantly from the time wages that had previously been pushed out by piece wages and was a reflection of a low level of quotas, measurement of, and organization of labor. Time payment of labor in today's strictly controlled processes does not constitute a forerunner of a system of piecework, but is on the contrary a consistent result of the most complete development of the latter.

Replacement of time payment to labor by piece payment usually meant, in the past (if one leaves out of consideration the use of fictitious piecework), a transition to a higher level of social control over the degree to which the standard of labor and the standard of consumption corresponded with each other. In cases where conditions for piecework existed, it was based on a more advanced mechanism than that hitherto existing for applying individual outlays of labor to the social standard thereof. To the degree that significant differences exist in the productivity of the labor of individual workers, depending upon their abilities and the intensify of their labor, the time that they expend upon carrying out a given job cannot serve directly as a measure of the labor they give to society, but has to be reduced to that socially necessary in given specific organizational and technical conditions on the basis of the quotas of work set. In piecework, the social standard for the productivity of the labor of the workers finds objective reflection in the units of product to be made in unit time, and the payment to labor is made in accordance with the quantity of acceptable products completed.

Reduction of individual outlays of labor to their social standard and payment in accordance with the results of labor make the piecework system of payment the most important form of stimuli to the increase in labor productivity and socialization thereof. The piecework payment to labor makes for introduction of a standardized technology, brings order into the organization of labor, eliminates shutdowns and disorder in the work, and creates powerful material incentives for better utilization of equipment and working time, and for improvement in the workers' skills.

As the level of mechanization of production rises, and the share of manual labor in the processing of the product is reduced, the conditions are established for transition to an ever more objective calculation of standards of earnings, and the amplitude of individual deviations, when quotas are fulfilled, is reduced. As we know, fluctuations in the fulfillment of quotas by various workers in machine operations are usually considerably less than in manual operations, and when automatic equipment is used they are still less than on universal-type machine tools. Such differences are almost entirely lacking in strictly-controlled processes. The time expended by the worker in producing the products becomes a direct social measure of his participation in social labor. Thus, the development of piece payment to labor again results in a time form of wages. Today, this form is based upon exact quota setting and accounting of labor, upon modern machinery and organization of production, and upon elimination of the direct relationship between the quantity of products and the intensity of labor.

In strictly controlled processes, technically-founded standards for earnings must coincide with the previously established productivity of the equipment, and lose their significance as a standard and regulator of the individual productivity of labor. Fulfillment of work quotas becomes a constant, or fluctuates for reasons not dependent upon the worker. Labor productivity rises due to a fundamental improvement in the equipment and the technological processes, increasing the power thereof and permitting expansion of the zone serviced by the worker. The chief method of setting of quotas for labor becomes a determination of the number of pieces of equipment served by the worker, and the nature, content and number of functions he performs. If piecework is retained, it increasingly acquires a purely formal nature. Recognition of the new character of time payment to labor in strictly regulated processes is reflected in the fact that workers in these processes everywhere get higher rates for their piecework than would time workers.

During the current seven-year plan, a number of tendencies have been established in the development of industry which will have differing effects upon changes in the percentage of pieceworkers to the total number of workers. The target figures for the development of the national economy of the USSR in 1959-1965 outline a broad program of electrification, of the introduction of chemical processes, and of all-round mechanization of production, with utilization of electronic devices, conversion from automation of individual installations and groups of machines to complex automation, and to the development of completely automated departments, technological processes, and enterprises. Realization of this program should lead to qualitatively new forms of productive processes, and to an increase in the number and capacity of strictly controlled flow-of-production schemes characterized by time-plus-bonus payment of their workers. In addition, it must be borne in mind that in connection with the increase in productivity of labor, which is particularly rapid in these processes, and the ever-increasing use of remote control therein, the increase in the percentage of workers engaged therein to the total number

of industrial workers will lag behind the increase in the share of these processes in the total volume of output.

The changes in the structure of industrial production outlined by the control figures must necessarily have some influence upon the increase in the relative number of workers on time rates. In the majority of the leading and most rapidly advancing branches of heavy industry (non-ferrous metallurgy, the manufacture of machinery, and particularly, production of electric power, the chemical, petroleum and gas industries), the degree to which workers are paid on a piece basis will be substantially less than the average for industry as a whole. The priority growth of these branches of heavy industry, envisaged by the control figures, will result in an increase in the relative number engaged therein such as will, all other circumstances being equal, lead to a reduction in the percentage of workers on piece wages in all of industry as a whole.

Under the conditions of today, experimental, test and preparatory work plays and an ever greater role in the expenditure of labor in production. This expands the range of jobs not always subject to quota setting, which is required in piecework. The reason for this is the fact that production consists of single units and small series. The application of piecework to these jobs often results in an artificial increase in the volume thereof, and in complex and sometimes fictitious calculations so as to "deduce" wages.

Simultaneously, processes occur and will occur in industry that increase the constancy and comparability of the jobs of work having to be done. The mass nature of production, the uniformity of the products, increase, as a result of the increase in the volume of work and specialization, and of the concentration of production of products of a given type in a minimum number of plants, combination of small enterprises, centralization of research and development centers, and of repair, tool and transport operations.

During the present seven-year plan, major undertakings will be carried out in the further standardization and unification of equipment, parts and assemblies of machines, materials, products and portions thereof, and also in standardization of jigs and fixtures, and of technological processes. All this conditions a reduction in expenditures upon the setting of quotas for and the accounting of labor per unit output, and thus expands the region of economically efficient utilization of the piecework form of payment to labor. The techniques of quota setting and calculation of labor are improved. Standardized norms are more widely utilized, as are unified time quotas covering groups of operations. Work in the calculation of standards and of their fulfillment is mechanized. As a result, the use of piecework becomes practical in some cases when production is of individual units and small series.

The change in the structure of the working class, and in the distribution of workers by classification will also have a significant influence in expanding the area of application of piecework. In recent years, the number of persons in certain groups paid on a time basis for auxiliary work, such as inspectors, work assigners, etc., has dropped in industry. This is due to the transfer of the functions of these groups of workers to the basic production personnel, to improvement of the schemes of technical control, to simplification of paper work in mechanization of accounting, quota setting and the planning of production. The experience of advanced enterprises shows that transfer of a portion of the auxiliary workers on time payments to performance of the major work is a significant method of mobilizing additional resources for increasing labor productivity on transfer to the seven-hour workday. As a method of further planned expansion of the output of production and

reduction of its cost, a relative increase in the number of basic production workers among whom pieceworkers are considerably greater than among auxiliary workers on the average throughout industry, will continue in the future. As the degree of mechanization of production and the level of payment of the workers rises, conditions are developed to combine work on the major production processes with repair and other auxiliary functions.

After the relative reduction of the number of workers on piecework subsequent to the wage reform of 1956-1960, it is our opinion that the following years of the seven-year plan will witness a degree of stabilization of the proportions thus established among the workers engaged on piecework and those engaged on time payment. The majority of the workers will, as before, be engaged in mass production on standard machines, involving work done either by a combination of machinery and manual effort, or by manual effort, where the conditions for piecework are favorable.

The increasingly consistent carrying into life of the principle of personal material incentives, based on constant technological progress, is reflected not so much in narrowing the real boundaries of employment of piece labor, as in the appearance of new factors in the application both of piece and of the time forms of wages, with piece wages remaining predominant. These new factors condition a certain approximation among the various methods of quota setting and measurement of labor and of provision of stimuli therefor, applied both in piece and in the time form of payment, with parallel preservation both of formal and real differences.

The change in the nature of time payment to labor is conditioned by the improvement of quota setting and accounting of the labor of workers paid for on a time basis, and widespread application of bonus systems of wages. Time payment is becoming, to an ever greater degree, payment on the basis of the results of one's work. Workers on time payment are being provided with technologically rational quotas for given numbers of personnel, standards for servicing, and work tasks. As noted above, time payment for labor is being extended to processes conducted under strict control, where quota setting and calculation of labor are most advanced. In connection with the reform of the wage system, more real indices of bonus payments to time workers are being set, and the organization of the accounting of fulfillment of these indices is undergoing improvement. The setting of quotas and the calculation of the labor of time workers becomes more objective thereby.

A proper organization of bonus systems will make it possible to combine time labor with a flexible, mobile and efficient system of material stimuli for improvement of various quantitative and qualitative indices of the work.

The new nature of the time form of wages demands, in our opinion, a new approach to solution of a number of important problems in the payment of the labor of time workers, the number of whom now exceeds three million in industry, and which will be about 4 million in 1960, after the measures for reforming wages have been carried into life. One of these problems is that of the desirability of employing scales for the majority of time workers that are lower than those of pieceworkers, and fall into classification I. Today, with the reform of the wage system, the scales paid to pieceworkers are being applied only to those time workers who are engaged in fundamental production processes and the repair of process equipment. The experience of a number of enterprises (the Kuznesk Integrated Metallurgical Plant and others) shows that differentiation of scales in terms of the forms of payment of labor results in an unjustifiable reduction in the earnings of highly-

skilled workers employed in auxiliary, precision operations (gauge makers, electricians, setup men, radio and control instrumentation repair mechanics, etc.).

We believe that after the introduction of technologically-rational quotas of personnel and realistic bonus systems, it is necessary to pose the question of a transition to payment of pieceworkers and other groups of time workers on the basis of a system of scales. These workers include, primarily, the low-paid, low-skill, auxiliary workers (charwomen, workers engaged in handing materials to other workers, workers engaged in issuing materials and tools, etc.), and those who are engaged for a considerable portion of the workday in what amounts to office work, warehousemen, clerks, etc. As indicated by the data gained from the 14 machinery-manufacturing enterprises and a number of metallurgical enterprises, the percentage of low-paid workers is considerably greater among time than among pieceworkers. An increase in the basic scale of time workers to that of pieceworkers of the same classifications represents, at the same time, a method of selecting the more capable personnel, that of reducing the number of workers engaged in these fields, as well of increasing labor productivity and reducing costs in the given areas of production costs.

It should further be noted that the type of organization of production processes exercises an important influence upon the level of labor productivity not only for pieceworkers but for time workers, including those engaged on auxiliary jobs. With the development of machinery and the division of labor, ever closer ties and relationships are established among the various groups of workers, and the intensity of the labor of a number of auxiliary time workers comes to be regulated to an ever greater degree by the rhythm of the fundamental production processes. Workers of the type we have in mind include crane operators, sling loaders, examiners and others, whose payment at lower scales is not justified if correct standards of servicing be applied. Inasmuch as different levels of intensity of labor can be established to exist even for workers of one and the same skill within a single shop, in accordance with the nature of the specific job being done, the methods of organization of production and of labor, the structure of the premium systems, the quality of the quota setting and calculation of labor performed, and of other organizational and technological conditions, the final solution of the problem of employment of the scales applied to pieceworkers for various groups of time workers should in our opinion be left to the management of enterprises and of the councils of the national economy. Only the general conditions and typical recommendations for application of scales paid to pieceworkers to various types of workers paid on a time basis should be developed centrally and issued in that fashion.

The fundamental changes in organization of management of socialist industry, and the further development of cost accounting demand that enterprises be given greater rights in disposing of the wage funds assigned to them, on the basis of the premises established centrally, and on the condition of strict adherence to the planned expenditures for wages per cost of unit production.

Changes in the nature and content of payment for piecework proceed in three directions:

(1) The significance of indices calculated in terms of the range of work performed is becoming more important (servicing of a number of machines simultaneously, combination of skills, jobs and operations) in quota setting and calculation of the work of pieceworkers. This is induced by a reduction in the auxiliary time with the increase in the level of organization of production, and also by the fact that a worker engaged on a continuous and highly-controlled

process is in a position to exceed the established over-all rhythm of labor productivity only by combining his major operation with an auxiliary one. Of ever greater importance in factors in increasing the productivity of pieceworkers are the increase in the power and the number of pieces of equipment one services, extension of the area he covers, and a relative reduction in the numbers of personnel to be employed. As we know, an increase in labor productivity in this way is characteristic of workers paid on a time basis.

(2) The role of premium payments in the earnings of the pieceworker increases. The application of premiums for fulfillment and overfulfillment of the plan of production expands. Piece payment for labor in the industry of the USSR is often employed in processes in which machine (or apparatus) time overlaps manual time, and the worker is able to achieve an increase in his earnings by accelerating a mechanized process, and not by increasing proportionately the amount of labor applied.

The real content of piece payment for labor begins to change under these conditions. With the development of equipment, mental labor comes to play an ever greater role in the activity of the worker. The accounting, control and monitoring of production processes, regulation, setting-up and adjustment of equipment begin to be of ever greater importance. The volume of output is determined to an ever greater degree not by a direct increase in the quantity of labor applied, but an increase in its quality. Thus, piecework loses its former nature as payment for a unit of work. The proportional relationship between outlays of labor and their results gradually disappears, although this is one of the most important prerequisites for the utilization of piecework. In significance and direction, material incentives by means of piecework come to approximate the bonus incentives paid to engineering and technical personnel and to particular groups of auxiliary workers, such as setup men. Thus, the process of erasure of the existing differences between the nature of the work of workers and engineering-and-technical personnel leads to a reduction in the differences and the forms of material stimuli.

In highly-mechanized processes, the standards of earnings must be completely founded on technological considerations. The possibilities of exceeding these standards are negligible in these fields. After the reform of wages, the bulk of the earnings obtained by pieceworkers in these fields over and above the scale will constitute bonuses. The structure of piecework wages will thus come to approximate that which is characteristic of time-plus-bonus payment to labor. Thus, in plants in the ferrous metals industry, the wages of pieceworkers servicing the major units today consist, as do those of time workers, chiefly of the base scale plus a bonus. Added earnings by workers in the major skills resulting from overfulfillment of the established standards usually fluctuate within the limits of a very few percent, and the bonus for fulfillment and overfulfillment of the plan for output of production comes to between 20% and 30% of earnings. In the coal industry of the Ukraine, the share of the base scale in the workers' earnings rose from 66% in July, 1956, to 71% in July, 1957 (after the wage scale was straightened out), and the share of bonuses paid during this period rose from 5-6% to 15-17%.

The possibility and pressing necessity for the immediate development in our industry of a substantial degree of collective material incentive to workers with respect to the fulfillment and overfulfillment of plans of production is also determined by the rising level of socialization of labor. The granting of bonuses for fulfillment and overfulfillment of the plans is based upon the high level of mechanization of

production attained by the most important branches of socialist industry, upon technologically-rational and modern multi-operation standards of production, which approximate planned assignments for output of products in terms of their levels. Economic efficiency of this kind of bonus payment to workers in the raw materials producing branches of heavy industry may be defined if one considers no more than the factor of time, the role of planned increase in the level of utilization of capacities in these fields for carrying out the major forward step in solution of the major economic problem of the USSR outlined by the target figures for 1959-1965. The increase in the number of mines and ferrous metallurgy plants that are carrying out and surpassing their production assignments is the first important consequence of the introduction of the new system of payment to labor.

(3) Collective forms of payment to labor are coming into wider use (crew payment based on the final operation and the final results of the work of shops and enterprises). This is due to the profound qualitative changes occurring in technology, equipment and the organization of population. Thus, the increase in the dimensions and weight of the equipment manufactured in the machinery industry has resulted in an increase in the share of processing of machine parts, and assembly thereof, by entire crews. Replacement of mechanical by chemical procedures has resulted in a spread into all branches of industry of processes occurring within apparatus, with the crew organization of labor, and crew payment methods characteristic thereof. The improvement of continuous flow production in a number of branches of industry is expressed in an ever stricter control of the productivity of individual labor by the uniform rhythm of the process, and leads to establishment of a system of wages on the basis of the general indices of product produced.

Complex mechanization and introduction of chemistry into production, and the development of methods of flow production define two typical and intimately related characteristics of modern equipment: complex combination of equipment into single units and improvement of the continuity of process procedures. These two principles attain the highest level of development upon complete automation of the processes of production, which signifies so strict a control of technological parameters that time payment of labor is essential.

The replacement, in a number of branches of industry, of individual tools by complex multi-purpose installations serviced by teams, and the growing interrelationship of consecutive operations in continuous production render undesirable, and in a number of cases impossible, the setting of quotas and the calculation of earnings on an individual basis, and consequently demand that labor be paid on the basis of general indices. The process of socialization of labor with the development of technology finds one of its expressions thereby.

The application of individual piecework assumes the possibility for each worker, in accordance with his ability and the intensity of his labor to increase his earnings without limit, and demands realistic, economically efficient quota setting and accounting of labor. The perfection of tools and the development of the division of labor lead to elimination of both these essential conditions for the employment of individual piecework. The dependence of the results of labor upon social conditions embodied in equipment and the organization of production takes on a character under which the possibility of stimulating the growth of labor productivity on the part of individual workers disappears. The bounds of application of piecework in its most advanced form —

direct individual piecework — are narrowed.

Although the share of individual piecework is still considerable, collective forms of wages are coming into ever wider use not only in the raw materials and fuel branches of industry, but in processing industry, in the manufacture of machinery, on the conveyors of shoe factories, and in the foodstuffs industry. (3)

The distribution of wages among members of a crew in accordance with the time each has given and the skill classification to which each belongs is the application of the principles of time payment within the crew. This factor is the more powerful, the smaller the degree to which payment in terms of general indices is combined with consideration of individual participation by the particular workers in the general results of work (performance of more than one operation or job by a single worker, a combination of skills, or the servicing of more than a single unit), and the more extensive is the composition of the crew.

It goes without saying that the extension of collective forms of wages does not reduce the role of rewards to individual workers, for the individual results of their labor in cases in which these results are subject to the setting of objective quotas and are of significance for the improvement of production. In this instance, the workers' personal interest is not diminished, but is expressed through a collective material incentive. Where payment on the basis of the total final results of the work is combined with careful assignment to each worker of specific operations, functions and segments of the job (for example, on conveyor lines with controlled rhythms in the manufacture of machinery or in the mining of very steep seams in the coal industry), the outlay of labor by all members of the team usually increases in direct proportion to the increase in output (however, added work done to make good the absence of workers who may not have shown up on the job is calculated and paid for separately).

In cases in which there is no such division of labor, for example, in the case of a team of chute drawers in coke ovens, the moral influence of the team upon the individual worker, and comradely help in their joint labor so as to achieve the required quantity and quality of work, are of particular importance. In some cases, the team will demand that a bad worker is kicked out. Usually, if the team is small, as for example in servicing blast furnaces and open hearth furnaces in the ferrous metals industry, the influence of the work of each participant on the uninterrupted course of the process is sufficiently clearly seen and is controlled relatively easily by the team itself. In order to improve such control, it is necessary to bring about a

further improvement in differentiation of earnings and scales by units served and shifts wherever this is of adequate effectiveness in consideration of the conditions of production (for example, in metallurgy, at cement plants, etc.). Payment by indirect indices should be applied only where it is based on real relationships to labor. Thus, payment of auxiliary workers on the basis of the results of the major production processes requires a careful analysis of the nature of the influence of the work done by these workers upon the course and results of production, and the effectiveness of the degree to which they are stimulated by such payment.

Transition to payment on the basis of collective indices should not be regarded as a universal means of improving the wage system in all branches of industry and at all points of production. This type of payment should be applied not mechanically, but to the degree that the necessary conditions are established for it in production. In view of the variety of these conditions in the various branches of industry and various sectors of work, all these tendencies to change the nature of time and piece payment of labor are general, but not universal. To the degree that the fundamental problems posed before industry by the seven-year plan for the development of the economy of the USSR are resolved, these tendencies will be reinforced.

Notes

(1) The percentage of workers covered by progressive piecework and time-plus-bonus systems was about 50% prior to the straightening out of the wage system, as against 34% in 1945 and 39% in 1936.

(2) When the wage system was reorganized in the coal mines of the Donbass in 1956, the number of classifications of workers in the coal faces was cut from between 8 and 12 to between 2 or 3, while a single category (class 1 and class 2 miners) was substituted for the 15 skills formerly listed for subsidiary and auxiliary jobs. This made it possible to cut the number of workers by combining various jobs.

(3) Unfortunately, the existing organization of statistical reporting of the distribution of workers by systems of wage payment does not define the process we have been discussing in the mass-scale statistical data, and it therefore is not subject to proper study, and cannot be analyzed and generalized for purposes of theoretical conclusions and practical proposals.

G. Gogol:

Some Problems in the Development of the Catering Industry During the Seven-Year Plan

The development of catering in socialist society entering the stage of all-out upbuilding of communism is most closely related to the future of housework, and to the living and working conditions of women, who have had the job of doing this work.

Engels observed that in primitive society, where private property and the present kind of family did not yet exist, the assignment of housework to women was just as socially necessary an occupation as was the acquisition of food by the men. With the development of the family as an economic unit in society, housework lost its social character: "it became a private service; the woman became the chief servant, and was isolated from participation in production by society." (*)

The appearance of large-scale capitalist industry opened possibilities for participation by women in production by society. However, matters developed in such fashion that if a woman carried out her obligations to her family, she was excluded from social production, and if she desired to participate in social production and have her own earnings, she proved to be in no position to carry out the housework and raise her children. Capitalist society is incapable of solving this problem. Housework, as V. I. Lenin pointed out, oppresses and demeans woman, and wastes her labor in unproductive and petty work.

The true liberation of woman, the elimination of her inequality with respect to men, is inconceivable as long as woman is isolated from socially productive labor and is occupied only in housework. The development of modern large-scale industry creates objective conditions for converting housework into social labor. However, only under socialism, only under conditions in which social ownership of the means of production dominates, does a mass struggle led by the proletarian government develop to reorganize petty housework into a large-scale socialist business, involving women in social labor and public life.

We are witnesses of the fact that the development of various branches of modern production have an enormous influence upon housework and the way of life of each family. The working people of the USSR are annually moving into millions of new apartments with all conveniences, assuring a cultured organization of everyday life and easing housework. The utilization of electricity as a source of light, heat and energy for the many household appliances and tools is of exceeding importance in changing this situation. In recent years, natural gas has come into ever greater use for household purposes. The need for the baking of bread at home has long since disappeared in the cities. Public bakeries are also appearing in the countryside. The clothing, knitwear, shoe manufacturing, canning, confectionery and other branches of industry are increasingly supplanting housework in the

making of clothing, the processing of various food products, etc.

However, to this day, a good deal of time is still spent in each family in preparing food, purchasing foodstuffs, etc. Therefore, catering is called upon to play an important role in the transformation of everyday life, and in its organization on a communist basis.

As far back as the first years of the existence of the Soviet government, V. I. Lenin ascribed particular significance to the creation of public restaurants, which he classed along with day nurseries and kindergartens as "the early shoots of communism." Lenin held that if they functioned in an exemplary communist way, the organization of public eating places could result in a saving of human labor, the creation of conveniences for consumers, the saving of foodstuffs, the liberation of women from the drudgery of housework, and improvement of sanitation.

Guiding itself by Lenin's instruction, the Communist Party and the Soviet government are doing all that is possible to develop and improve catering, which has been converted into a major branch of the socialist economy in our country. At the beginning of 1958, the USSR had 129,000 public eating places, or 47% more than in the pre-war year of 1940. A considerable portion of the foodstuffs acquired by the population in government and cooperative trade is today purchased through the medium of public eating places. Thus, in the first half of 1958, this was true of 33% of the meat and fowl, 20% of the milk and milk products, 27% of the potatoes and vegetables, 41% of the non-alcoholic drinks and ice cream, more than 16% of the confectionery products, etc. About a million workers are engaged in the catering industry, of which one third are cooks and other kitchen workers directly involved in the preparation of foodstuffs.

Our press has published various data on the numbers of people served by public catering enterprises. As there is no report on the number of consumers, this can only be arrived at by calculation. In 1957, these enterprises prepared 11,400,000,000 dishes. If it be taken, as is generally accepted, that the average number of dishes per consumer per day is 2.2, the number of people being fed regularly through them was about 200,000,000 in 1957. Moreover, it has to be borne in mind that a considerable portion of the customers take advantage of the buffets attached to restaurants and more than 7,000,000 persons are fed regularly in rest homes, sanatoria, children's institutions, and hospitals. Thus, approximate calculations would indicate that about 40,000,000 persons are served by the catering industry.

However, catering has not yet become a sufficiently large-scale field, nor is it adequately convenient and profitable for the population. A large number of working people, office workers and students do not eat in restaurants, not to speak of the members of their families. During the period of all-out upbuilding of communist society, favorable conditions will be created for the further rapid development and improvement of catering.

The development of catering will make for great economy

* Friedrich Engels, *Origin of the Family, Private Property and the State*, Government Political Press, 1953, p. 74.

of the material and labor resources available to society. Therein lies its vast significance to the national economy. However, one cannot approach the organization of catering only from the point of view of solution of specific economic problems; it has to be borne in mind that the development of public catering goes along with other forms of satisfaction of the needs of Soviet people (improvement of service industries, expansion of the system of institutions for children, etc.) — a truly communist road to the improvement of the well-being of the working people. Acceleration of the development of public feeding has become one of the important conditions of the upbuilding of communism. Today, the necessary prerequisites for such development exist.

A number of our economists are bound by the prejudice to the effect that a high demand for the products of public catering will develop only if there is an inadequacy of foodstuffs in the markets, as was the case during the periods of rationalizing (1929-1934 and 1941-1947). This opinion is erroneous. Favorable conditions for the widespread development of public catering will come into being on the basis of a growing abundance of food products. Particularly now, when, as a result of the wise policy of the Party, our agriculture is progressing along the path of a sharp upturn, and its commodity production has substantially increased, a material foundation has been created for the further rapid development of public catering.

In recent years, there has been a substantial increase in the delivery of products of public catering enterprises. From 1953 to 1957, the supply of meat has increased by more than 60%, that of milk, milk products, eggs and vegetables has nearly doubled, that of sugar has risen 60%, and that of potatoes and fruits has more than doubled. During the current seven-year plan, as the result of the growth of commodity production by agriculture, and the production of the foodstuffs industry, public catering is being provided with a base of supply that will assure rapid rates of development. This opens new perspectives for the development of public catering in our country.

One of the most important problems in the development of public catering is the expansion of the network of enterprises therein. During the post-war years, the following changes have occurred in the number and composition of enterprises in public catering (thousands):

	Beginning of 1941	Beginning of 1958	1958 as % of 1941
Cafeterias, restaurants, tearooms	42.8	56.7	132
Snackbars and buffets	42.9	72.0	168
Total	85.7	128.7	150

These data show that the network of basic enterprises in the public catering industry has risen only one half as rapidly as that of snackbars and buffets, that is, of enterprises that merely supplement the basic network and that, for the most part, sell across-the-counter products and buffet products.

In recent years, there has been something of an acceleration in the development of the system of public catering enterprises. However, even today, the rates of increase of this system are inadequate, particularly if it be borne in mind that many enterprises of a temporary nature are

being done away with in view of the fact that the buildings they occupy are run down. Thus, 9,361 new enterprises were opened in this field in the government-owned sector in 1956, but the net increase was only 3,872 units. In 1957, the net increase of public catering enterprises was even smaller: 2,302. In some districts of the country, the number of enterprises eliminated because of the rundown condition of their buildings and for other reasons has even exceeded the available increase in the system, with the result that the total number of enterprises not only is not increasing, but is diminishing. In 1957, the number of enterprises in the public catering industry diminished (primarily due to a diminution of the number of cafeterias) in the Yaroslavl, Kostroma, Astrakhan, and certain other districts.

One of the causes for the inadequate rates of growth of the system of cafeterias, cafes and snack bars is the fact that the local city Soviets have assigned exceedingly little space for such businesses in multi-story apartment buildings now going up. In 1956, only 461 enterprises were opened on the ground floors of such buildings across the entire country, and in 1957 only 440 such public catering enterprises were opened in space of this type. If we take into consideration that 67 million square meters of living space was built in these two years by the government and cooperatives, excluding collective farms, it becomes clear that an exceedingly slight percentage of the space being made available in dwelling structures is now being provided to establish public catering enterprises, this space being only a fraction of that going to individual kitchens in the apartments.

It seems to us that the organizations planning housing, and the local Soviets which are today the major builders of the supply of housing, must take a new approach to the planning of the relationship between individual and public kitchens in multi-story dwelling houses and apartment blocks. The individual kitchen, could, even at minimum size, provide breakfast, lunches and dinners to hundreds of families in the dwelling house or apartment block.

In their resolution "On Further Development and Improvement of the Catering Industry," adopted in February, 1959, the Central Committee of the Communist Party of the Soviet Union and the USSR Cabinet required the cabinets of the constituent republics, the ministries and the administrations to set aside space on the ground floors of new buildings to set up cafeterias, cafes and housewide kitchens. The large scale of housing construction during the seven-year plan would make it possible to set up thousands of new public catering enterprises in this way. In addition, all possibilities now locally existing for development of the systems of public feeding enterprises by adapting buildings suitable for this purpose, by more rational utilization of the space presently available to cafeterias, and by transfer of buildings now not being used for the purpose for which they were constructed must be employed. In 1957, 5,340 enterprises or approximately two thirds of the total number of newly organized enterprises (not counting those within the consumer cooperative system), were opened in buildings provided by factories, plants, offices and educational institutions.

The seven-year plan provides for an increase of not less than 64,300 public catering enterprises, and of 3,100,000 seating capacity therein. As of the beginning of 1958, the seating capacity of public eating places was 3,600,000. Thus, it is planned to increase seating capacity by 86%. The average annual increase will be 443,000 places, whereas in 1957 it was only 245,000 seats.

Currently, the relative number of enterprises in public catering in the various towns and workers' settlements of

the country fluctuates widely. Thus, in Leningrad there is one seat per 18 inhabitants, in Gorky one per 25, in Sverdlovsk one per 26, in Perm one per 31, and Kuibyshev, one per 39. In a number of towns, the public eating places are unevenly distributed. There are entire streets and districts where no such place is to be found. Experience has shown that in order to organize public feeding of the urban population properly, there should be not less than 25 seats per thousand inhabitants (not counting the cafeterias in factories, plants and offices).

The development of public catering in the villages is acquiring great importance under the conditions of the present day. From 1950 to 1957, the network of public eating places maintained by the consumers' cooperatives rose from 24,400 to 35,900. The number of dishes prepared rose during these years from 708,000,000 to 1,813,000,000. However, one half of the village enterprises are snackbars, many of which do not even have their own kitchens. The percentage of products prepared on the spot in the total turnover of public eating places is less than 25%. There are few cafeterias in the state farms, although the network of such enterprises in state farms increased from 1,400 in 1950 to 3,700 in 1957.

In the current five-year period, the consumers' cooperatives are to open 19,000 new public eating places with 877,000 seats. Moreover, the village cafeteria should take its place alongside the tea room, the confectionary and others as a major type of institution.

The Central Committee of the Communist Party of the Soviet Union and the USSR Cabinet have required the Centerosoyuz and the USSR Ministry of Agriculture to organize public cafeterias in 1959-1960 in all state farms, both at their central villages, and in their major subdivisions, and to take measures to bring about a substantial improvement in the work of the cafeterias and buffets now existing. Responsibility for uninterrupted supply of food products to these cafeterias has been placed upon the managers of the collective farms and the leaders of the cooperative organization. Cafeterias in state farms should function so that the workers and office personnel of the state farms and the members of their families can either eat tasty meals there at accessible prices, or take their meals home.

With the increasing socialization of all branches of the economy and the increase in the socially-owned capital of the collective farms, work in the direction of establishing collective farm cafeterias (or kitchens) to serve the collective farmers and the members of their families will proceed on an even broader scale.

The development of a system of enterprises for public catering is only the quantitative side of the problem. In addition thereto, the problem of increasing the efficiency of utilization thereof must be solved. This depends in the first place upon the degree to which progressive forms of servicing of consumers are employed.

The directives of the 20th Congress of the CPSU, and the resolution the Party and government adopted in March, 1956, pointed to the need for converting the bulk of public catering enterprises to a system of self-service, and for the introduction of other progressive methods of work. In the course of 1956-1957, self-service was introduced in 80,300 enterprises containing 2,400,000 seats. A selective survey of 1,987 cafeterias made by the Central Statistical Administration of the USSR during the second quarter of 1956 showed that conversion to self-service resulted in an average increase in output by 13% per day, while the share of dinners in total sales increased from 49% to 54%. The number of dishes in school and workers' cafeterias increased particularly. At the same time, the average turnover per

cafeteria rose by only 2%, and service costs dropped from 14.7% only to 14% of turnover.

The system of self-service initially introduced was subsequently improved. Thus, a system of selection of the dishes by the consumer himself, and payment afterwards was adopted in many places. This system, combined with the utilization of the special dispensing counter, permits a sharp increase in the traffic capacity of the business and provides a considerable convenience for the customer. For example, in the student cafeteria of the Dnepropetrovsk College of Railway Engineers, the introduction of self-service with payment for the dinner after service resulted in a 26-27% increase in business, a 17% rise in labor productivity, and a reduction in costs of operation from 13.6% to 12.5% of the total. In a cafeteria on Sverdlov Street in Kharkov, the number of dishes sold rose by 31%, and the percentage of the business that represented products processed on the premises rose from 65% to 98.3%.

The system of self-service with payment after service had a major effect in all businesses using this system without exception, regardless of the size of the individual place or the volume of business it does. Moreover, there is a sharp increase in the number of dinners and other sales based on processing in the given place of business, and the share of goods merely sold over the counter is reduced.

In factory and student cafeterias, the system of self-service combined with advance sale of subscriptions or meal checks is particularly efficient. This makes it easier to settle accounts with the customers and makes for a better planned organization of the work of the restaurant.

At many enterprises, primarily in the major restaurants and cafeterias, there are considerable reserve capacities in terms of output, not employed because of the inadequate traffic capacity of the actual selling space, the uneven flow of customers, and other factors. This came to be noticed particularly in recent years, when the kitchens, confectionaries, meat-and-fish, and other departments of these businesses were provided with a large quantity of new, high-output equipment, which is usually given very little use (sometimes only one or two hours per day). At the same time, many consumers prefer to buy prepared dinners, food products and confectionery products or semi-cooked items for consumption at home. A fuller utilization of the production capacities of the cafeterias and restaurants is now giving rise to a new branch of commerce: the sale of prepared foodstuffs, semi-processed products, finished frozen dishes, etc. In the cities, there are now more than a thousand special stores selling cooked items obtained from restaurants and cafeterias.

The demand for cooked products prepared by public catering enterprises has increased to such a degree that along with the specialized stores in the field of cookery, it has become necessary to create departments in the large food stores to fulfill the demand. Specifically, the experience of this business in Moscow shows that in a number of food stores it is possible not only to sell cooked products and semi-cooked products, but to organize small cafeterias. Many food stores will gradually be converted into stores and cafeterias, selling both foodstuffs and semi-prepared items, finished cooked items, snacks, hot drinks, etc.

Thus, the sphere of activity of the public catering enterprises will undergo considerable expansion, and in this connection there will be a gradual transformation of retail trade in foodstuffs. Simultaneously, there will be an expansion of the sale of dinners to be eaten at home, which would permit these same business areas to serve a larger number of customers.

As far back as the first five-year plan, when the impetuous rise in large-scale industry and the growth of towns demanded a considerable expansion of the catering industry, efforts were begun to find methods of industrial organization of the production of meals on a mass scale. In some towns, a system of large-scale factory kitchens and mechanized restaurants provided with equipment for large-scale production of dinners was organized, so as to distribute hot food in thermos bottles to distributing restaurants at the plants, factories, offices, etc. At the beginning of the thirties, there were about 140 factory kitchens in the large cities and some hundreds of mechanized cafeterias. However, this procedure did not justify itself. It resulted in reducing the quality of the food and inhibited improvement of public catering places in the country. In a resolution of August 19, 1931, "On Improving Public Catering," the Central Committee of the Party pointed to the need to convert from the factory kitchen and thermos system of deliveries of dinners to primary enterprises that would carry out mechanized initial processing of the foodstuffs and supply restaurants with semi-cooked foods. This resolution set forth the main line of development of mass production of meals. However, the conditions of that period did not permit complete realization of the program set forth by the Party.

Today, we have created the necessary material prerequisites for transition everywhere from handicraft methods of organization of the preparation of foods to mass factory preparation of semi-finished foods and centralized supply thereof to the public catering places.

It must be pointed out that, as a rule, it is small and medium sized enterprises that predominate in public catering. The falling proportion of the products made (measured in numbers of dishes) falls to the share of enterprises having more than 50 seats: to the cafeteria system of the ministries of commerce of the various republics 25%, to the snackbars 55%, and to the restaurants 10%. The cafeterias of the departments of workers' supply having under 50 seating capacity make only 40% of the total number of dishes, and those of the cafeterias and tea rooms of the consumer co-ops make 64%. Thus, the bulk of all public catering products are made in small enterprises. Each such enterprise is isolated, and each one performs all production processes starting from primary processing of the raw material to the preparation of the dishes themselves. This requires the maintenance of a considerable staff of workers and substantial space for production and storage, as well as complete sets of equipment and tools, while the labor supply, as well as the materials and equipment of these enterprises, is employed irrationally and most inefficiently. For example, a cafeteria with a seating capacity of 50 processes an average of 40 kg of meat, 5 to 10 kg of fish, 50 to 70 kg of potatoes and 30 to 40 kg of vegetables on the average per day. At this scale of production, the equipment available can only be used one to two hours per day, and it is impossible to make rational use of the available space, the wastes of production, etc. As far as labor productivity is concerned, the output is only 2,800 dishes per quarter per worker in cafeterias having under 25 seating capacity maintained by the commerce ministries of the various republics, while it is 5,200 dishes at large businesses (over 150 seating capacity).

The resolution of the CC CPSU and the USSR Council of Ministers "On Further Development and Improvement of Public Catering," points out that this method of preparation of foodstuffs is expensive and also inhibits increase in labor productivity in public catering, and does not facilitate an increase in the output of kitchen products. The task

ahead is to convert cafeterias, restaurants, tea rooms, cafes and snackbars to use of semi-prepared materials in the years 1959-1961, processed on a mass scale in enterprises of the meat, dairy, and fishery industries, as well as at factory kitchens, factory-type food-processing enterprises, and in special departments of fruit-and-vegetable processing enterprises and others.

The significance of conversion to centralized processing of semi-prepared foods is indicated by the following example. There are 83 mechanical potato peelers in enterprises belonging to the Bauman neighborhood restaurant system of Moscow. Their total capacity is about 40 tons of potatoes per hour, yet the fact is that all of these places put together process less than 200 pounds of potatoes per month. This work could be done by one powerful machine installed, let us say, at a fruit-and-vegetable business, and the washed and cleaned potatoes could be supplied not only to the restaurants, but to the retail network for sale to the population.

The method of storage and transportation of cleaned potatoes developed by the Scientific Research Institute for commerce and public catering makes possible conversion to centralized primary preparation of potatoes at food-and-vegetable enterprises, factory kitchens, or special plants. At the present time, this method is used at a number of factory kitchens in the USSR, as well as in Czechoslovakia and other countries. In Czechoslovakia, a special mechanized line has been built for processing potatoes. Its use at our vegetable-and-fruit enterprises would completely mechanize this laborious job. Centralized processing is also applicable to meat, fowl, fish, potatoes, vegetables (primarily root crops) and in certain other products. Enterprises of the meat and dairy and of the food industries — slaughterhouses, dairies, fish canneries, bakeries, etc., have a big role to play in organizing this matter. The Moscow fishery enterprise began, in February of this year, to supply a number of cafeterias with various types of semi-processed fishes (soup stock, bone fish, fish stuffing, patties, etc.). In 1959, it is planned to handle 3,000 tons of semi-finished products. Conversion to work with semi-prepared materials will make it possible for the cafeterias to cut the price of each fish dish by 15 to 20 kopecks at the very outset. Extensive mechanization of production processes at this enterprise will permit a further reduction of cost in the future.

Departments to prepare semi-processed foodstuffs should also be set up at the factory kitchens and large cafeterias. There is such a department, for example, at cafeteria Number 13 in Vilnius. Here there is a high-power universal machine for the processing of semi-prepared meat items, a semi-automatic machine for making hamburgers, and other equipment. These semi-prepared foods are delivered to 30 public eating places in the town. Aluminum containers are used for this purpose. A similar department has been set up in Kaunas. Thanks to the conversion to the use of semi-prepared foods, the cafeterias of these two towns alone have been able to cut their kitchen staffs by more than 20, and the wages saved alone come to about 100,000 rubles a year.

Semi-prepared goods for public eating places are also made in a number of factory kitchens in Moscow and Leningrad, as well as in factory kitchens and in large cafeterias at Kiev, Kharkov, Odessa, Stalino, Minsk, and other towns. However, this work is still on an inadequate scale. In 1959-1961, the majority of public eating places in town and country will convert to the use of semi-processed foods. This will require serious preparatory work on the part of the commercial organizations and enterprises in

the public catering, the meat-and-dairy, and the foodstuffs industries. In the Russian Federation alone, about 500 departments will be equipped to process meat, fish and vegetable semi-finished products. All this will signify a conversion to a new organization of public catering, and abandonment of the handicraft, low-output method of producing foodstuffs and a conversion of this method on the basis of mechanized modern production.

Conversion to the use of semi-processed foods will permit acceleration of the development of public catering, and an increase in the output of kitchen production. At the same time, this will be one of the fundamental resources for the reduction of costs in prices for meals. The reduction of prices for the products of public catering is one of the most important problems of the seven-year plan, and a significant source for increase in the real wages of workers and office personnel. Price reduction, which will have a favorable effect upon the budgets primarily of working families, will open the road to a further development of public catering, as public preparation of foods will become more profitable than the purchase of products in stores and preparation at home.

Centralized processing of the raw materials and provision of semi-processed foods to the enterprises will make for a substantial reduction in the costs of production involved in public catering. The economy will be attained primarily by increasing the labor productivity of kitchen workers in cafeterias, snackbars and other enterprises now engaged in processing the raw materials themselves.

If we judge the productivity of the labor of workers in public catering by the number of dishes prepared, we find that output per worker rose about 20% from 1940 to 1957. This means that the provision of various types of equipment to small enterprises, unaccompanied by a change in the organization of production, cannot solve the problem of fundamental increase in labor productivity. With conversion to centralized processing of raw materials, the possibilities are created for a definite change in this respect.

In connection with the change in organization of the work of the public catering enterprises, it is possible not only to reduce the number of kitchen personnel, but significantly to reduce the number of persons engaged in management. For example, at the Yaroslavl Motor Works, special shop cafeterias recently existed, each with its manager, bookkeeper, calculators, and storage personnel. Combination of these cafeterias into a single public catering enterprise made possible a substantial reduction in the administrative personnel, and a reduction in costs.

Transition from daily calculation of the prices of dishes to rigid bills of fare, set in accordance with local conditions, is of substantial significance. Enterprises in a number of towns in the Ukraine have accumulated substantial experience in this respect. Since April, 1958, 204 public eating places in Kiev have introduced permanent prices for their products. It is characteristic that despite some fluctuations in the quality of the foodstuffs purchased, deviations from the established fixed prices represented only 0.1% of turnover in 9 months of 1958, or 0.3 kopecks per dish on the average. Fixed prices have been introduced in a number of cities, following the example of Kiev. In 1959, the new system of price formation is to be introduced everywhere.

Fixed prices create conveniences for the customers and represent a basis for subsequent reduction in prices. They make it possible to cut down the staff of persons engaged in calculating prices of dishes, and to simplify accounting. Suffice it to say that the enterprises in the catering field within the system of what was formerly the

Ministry of Commerce of the USSR employ some 5,500 calculators and 20,000 bookkeepers. It has been calculated that with transition to work with semi-prepared products, with simplification and reduction of the managerial staffs in connection therewith, the costs of public catering enterprises could be reduced by not less than 10%, which comes to almost a billion rubles.

There are numerous other resources for reduction of the costs of public catering enterprises. Thus, introduction of a route system of shipment of products to the Vilnius restaurant system made possible a reduction of 14,000 rubles per month in transport costs. The government of the Lithuanian SSR has cut the costs of rent for public eating places as well as the rates of payment for public services (water supply), as they had been substantially higher than those paid by other government enterprises and offices. Utilization of available resources for costs made it possible for the government of the republic to institute an average 7% cut for the products sold in cafeterias, snackbars, buffets and cafes. As a result, the customers will benefit to the sum of more than 16 million rubles in 1959 alone.

A significant reduction in costs may also be obtained as the result of introduction of more economical ware and plastic and polyethylene equipment, the use of cheaper sources of fuel and power (natural gas, local fuel, etc.), large-scale use of small trucks (the Moskvich station wagon, and motor scooters), and introduction of a number of other measures.

Reduction of costs of production and circulation do not at all complete the list of possibilities for cutting the costs of production in public eating places. More than 82% of the retail costs of meals represents raw materials and products. If only products processed in the given eating place itself be taken into consideration, the share of raw materials in the retail price comes to not less than 70% or 75%. Consequently, a reduction of prices for the raw materials received for processing is of considerable importance. There are three major sources for this:

- (1) Development of subsidiary enterprises (pig raising), which makes it possible to produce cheap foodstuffs for the restaurants,
- (2) Decentralized purchase of products by the public feeding enterprises in collective farms and from the collective farmers as individuals, and,
- (3) Rational utilization of the raw materials, saving of processing wastes and utilization thereof.

Recently, the trading organizations have come increasingly to develop pig farming based on utilization of the food wastes of public feeding enterprises and of wastes collected from the population. In eight months of 1958 alone, the Ministry of Trade of the Ukrainian SSR has fed up 330,000 pigs, and the quantity of food wastes being employed is 150,000 tons per year. The production obtained from these subsidiary enterprises is included in the calculation of the cost of dishes, and this substantially reduces the price of a meal.

One of the fundamental problems involved in improving public catering is increasing the quality of the food produced. This depends substantially upon the skill of the cook. In 1940, 19.6% of kitchen workers were chiefs of production and of departments, classified as first rank cooks, and second and third grade cooks and cooks' helpers were 29.3%. This pertained to the system formerly under the Ministry of Trade of the USSR. In 1957, the percentage of highly-skilled cooks dropped to 18.8%, and the percentage of cooks of the lowest skill rose to 37.5%. These data testify to the fact that the rates of reproduction of skilled labor force for public feeding lagged behind the rates of development of

this branch of the economy and of the rising demands for quality products. In their resolution "On the Further Development and Improvement of the Catering Industry," the CC of the CPSU and the USSR Cabinet required of the cabinets of the constituent republics that they provide for the training of public catering experts in colleges and technical high schools to the numbers required by the enterprises and public catering organizations, and that they organize the training of cooks on a large scale in technical schools and the lower rank schools of the culinary trades, as well as directly on the job.

The quality of foodstuffs is dependent to an enormous degree upon the degree to which enterprises are provided with high quality produce. In a number of places, the mistaken practice of purchasing lower grade and quality foodstuffs for the public catering enterprises has become established. This practice should be strictly condemned. Continuous supply of the required foodstuffs, spices, and condiments should be organized everywhere. Feeding of pigs, the raising of rabbits and water fowl, the raising and catch of fish in ponds and local reservoirs, the production of vegetables, grains and potatoes in suburban state farms or collective farms, the procurement and processing of mushrooms, berries, etc., should be developed on a large scale.

The execution of the decisions of the 21st Congress of the Party and of the resolution of the Central Committee of the CPSU and the Council of Ministers of the USSR "On Further Development and Improvement of the Catering Industry," will raise the public catering enterprises to a new and higher level. During the present seven-year plan, the production of public eating places will more than double. Their organization will change fundamentally. Under these conditions, it is necessary to examine anew certain problems of planning in this branch of the national economy.

The business of public eating places, as we know, is the preparation of foodstuffs and their sale. Functions of production and commerce are performed here. However, the planned indices of enterprises in the public catering field reflect only the second portion of the activity: the retail sale of the foodstuffs prepared to the consumer. The business activity of the enterprises is defined by the volume of commodity turnover, which includes not only the sale of dinners and other products but the sale of purchased products which are not processed. This system of planning leads above all to a chase after fulfillment of the plan of turnover by the easiest method of all — increasing the sale of purchased products.

In addition to the planning of gross sales, another index is now provided for in the plan: sale of dinners. However, this does not essentially change the situation, as all the qualitative indices (wages, costs, profitability, etc.), are tied not to the sale of dinners, but to the total sales of the enterprise.

A selective investigation of 133 restaurants attached to industrial enterprises in Moscow, carried out in 1955, showed that whereas their own products represented somewhat below 40% of their gross sales, the costs were 15.2% of sales, and that figure was 15.8% in places in which 40% to 50% of the total business consisted of products processed on the spot, and 16.6% in places where more than 50% was processed on the spot. Consequently, the greater the percentage of a business's gross sales consisting of foodstuffs processed on the spot, or in other words the better it worked, the higher its level of cost.

On the whole, costs in the public catering system increased from 13.35% in 1950 to 15.33% of gross sales in 1957. A comparison of the makeup of the costs shows that it was chiefly expenditures for maintenance of cooking

personnel, fuel, steam, electrical energy, laundry and other needs of production that had risen. All this relates to the fact that the share of sales consisting of foods cooked on the spot increased from 27% in 1950 to 39% in 1957. It seems to us that the conclusion may be drawn from this that the total volume of commodity turnover cannot serve as the major index of the activity of a business in the public catering industry. It should be maintained merely for purposes of calculation. The gross sales of foodstuffs processed in its own kitchens are a more accurate reflection of the volume of its activity and expenditures, particularly if we take into consideration that in many cases, this share now is 70% to 80% of the total sales. However, it must be borne in mind that at a number of places, the sale of foods processed in their own kitchens does not correspond to the volume of such foods produced. The semi-processed foods, the finished foodstuffs and other products produced in public catering industry enterprises go into the sales of the enterprises at which they are produced only if sale to the customer occurs at this enterprise. If the sales takes place through another enterprise or through the retail system, it is not included in the turnover of the manufacturing enterprise, and this inhibits the development of production in enterprises of the catering industry. All this is a result of the fact that it is not production, but only trade, that is provided for in plans for the public catering industry.

At the present level of development of public feeding, it is necessary to convert to planning the production indices of its enterprises. It is essential that the major index not be commodity turnover or even turnover of meals, but the volume of produce processed. Of course, such a system of planning would also not be perfect and it would be necessary to discuss the possibility of planning production in terms of predetermined outlays of labor as is done for example in the clothing industry. This would prevent fulfillment of the plan by the production of expensive dishes, at the expense of the production of inexpensive ones. However, as a first stage, even converting to planning of the total volume of production in money would, in our opinion, play a positive role. This would create stimuli to all-out development of production, broad utilization of semi-processed goods, and would permit a correct evaluation of indices of labor productivity, the level of costs, the degree of utilization of the available supply of materials and personnel, etc. In this connection, it would be necessary to examine the system of payment to labor of the managers of such enterprises, and of certain other personnel, so as to establish a relationship between their salaries and the volume of production.

In connection with the transition to fixed prices it is necessary to examine the question of changing the procedure for including markups to cover the costs of public catering in the price of each dish. As we know, at present the markup is based on a percentage of the cost of the raw materials and is differentiated by the categories of enterprises and types of products, or by types of raw materials (in enterprises, where average weighted prices of raw materials are employed). In all cases, the scale of the markup depends upon the cost of the raw materials. This tends primarily to encourage the production of expensive dishes. At a number of enterprises, preserved products instead of fresh ones are used as raw materials, and those raw materials are placed in the pot that tend to increase the cost of the raw mix, but do not serve to improve the quality of the product. Fish products, vegetables and milk are used to an exceedingly small degree in public catering. It is

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A. Khankovsky:

The Repair and Equipment Stations and the Collective Farms

The new upsurge of agricultural production in the current seven-year plan will be accompanied by a further development of collective farm production, a growth in its supply of materials and equipment, and the strengthening of the collective farms in the organizational and business sense. In this regard, the problem of increasing labor productivity takes on primary importance. This problem will be solved on the basis of the completion of the all-round mechanization of agricultural production and a sharp improvement in the organization thereof.

The carrying into life of the resolutions of the February and June, 1958, Plenums of the Central Committee of the Communist Party of the Soviet Union with respect to further development of the collective farm system and the organization of machine and tractor stations, the repeal of compulsory deliveries and rental in kind for the work of the machines and tractor stations, a new procedure, prices and conditions for procurement of agricultural products open enormous possibilities for increase in labor productivity and accelerated development of the public business of the collective farms. The experience of the collective farms and the repair and equipment stations under the new conditions testifies to this.

The reorganization of machine and tractor stations created conditions for serious improvement in the organization of collective farm production, more effective utilization of machinery and an improvement in labor productivity. As early as July 1, 1958, almost two thirds of all the collective farms had acquired equipment formerly belonging to the machine and tractor stations. By early December, 1958, 80% of the machine and tractor stations had already been organized into repair and equipment stations. The collective farms acquired 21 billion rubles worth of tractors and other agricultural machinery from the government. At the beginning of 1959, 83% of the collective farms had acquired equipment from the machine and tractor stations. They took over 79% of all the tractors that had been in the possession of the machine and tractor stations at the beginning of 1958, and 67% of the harvest combines. During the period of field work, the collective farms were able to carry out 73% of all the necessary work in 1958 with their own tractors, and in the period from July to October they did 85% of the total volume of work requiring tractors.

In the majority of districts of the country, the process of reorganization of the machine and tractor stations and the sale of machinery to the collective farms is going more rapidly than was expected. A large portion of the economically strong and of the average collective farms strove to acquire machines from the machine and tractor stations as rapidly as possible, so as to utilize all the advantages of having their own equipment as quickly as possible. Moreover, in the spring of 1958 many of them had feared that preservation of the old procedure of servicing the collective farms with productive machinery for some period of time would have a negative effect upon the spring planting campaign and upon the results of the entire economic activity of the collective farm for the year.

At the present time, it is noted virtually everywhere that

the collective farms are taking measures to improve maintenance of machinery and to take a more careful and businesslike attitude toward them. This has resulted in a sharp reduction in breakdown of machines, in economic handling of funds expended for current repairs. A significant increase in the work done with their own machines permitted a number of collective farms to deal, in 1958, with individual cases, or sometimes even with large volumes of work as compared to the preceding year, to do this in briefer periods, and sometimes with a smaller number of machines than when they had been serviced by the machine and tractor stations. Thus, for example, in the Iskra Collective Farm of Novorossiyskiy Rayon, in Aktyubinsk Oblast, where the sown acreage in 1958 was 15,000 hectares, 34 tractors did the work that had been done by 38 in 1957, when the machine and tractor stations did the work. In the Luch Vostoka Collective Farm of Alma Ata Oblast, the sown acreage was expanded by 1,041 hectares in 1958, yet the field work was done that spring by eight tractors less than in 1958.

It is understandable that some experienced managers of collective farms expressed the desire, during the period of reorganization of the machine and tractor stations, to acquire a smaller number of machines than had been assigned to them when they were serviced by the machine and tractor stations. This is understandable, because the new organization of collective farm production made it possible for many collective farms to carry out a large volume of agricultural work with a smaller number of tractors and other machines. Thus, for example, the Vlast Sovetov Collective Farm of Omsk Oblast, which had been serviced with 36 tractors by the machine and tractor station, was one whose leaders calculated that they had to buy only 24 tractors. Unfortunately, there were also cases in which the leaders of collective farms strove to buy smaller numbers of machines without a calculation of their actual needs, and this resulted in harm to production. For example, the Lenin Collective Farm that had been within the zone serviced by the Peshanskaya Machine and Tractor Station of Odessa Oblast decided to purchase nine harvester combines instead of the sixteen with which it had been serviced in 1957, when the harvesting of the grain took 27 days anyhow. But facts of this kind are an exception.

The reorganization of the machine and tractor stations and the sale to the collective farms of tractors, combines and other machines proved, under the difficult conditions of 1958, to have a positive effect upon the results of agricultural production. We know, for example, that the exceedingly late spring of 1958 placed many collective farms in unfavorable positions, particularly in Siberia, Kazakhstan, and a number of other districts of the country, where spring grains are the main crop, and where the danger that planting could not be carried out in time existed. Thus, in Kazakhstan, as of May 15, 1958, 9,600,000 hectares less of spring grain had been planted than on May 15, 1957. Nevertheless, the planting plan was finally overfulfilled. From May 15-20, alone, 21,500,000 hectares of spring grains were planted, or 3,000,000 hectares more than in the

corresponding five-day period of 1957. Despite the very greatly delayed spring, the grain growers of the Altay planted 354,000 hectares more by May 20 than by the same date of 1957. The spring planting also went faster than usual in other regions of Siberia, except for Omsk Oblast, where the rates of spring planting were considerably behind those of 1957. In the Ukraine, the spring field work done per tractor in the collective farms was 33% higher in the spring planting. The fact that the equipment was in the hands of the collective farms made it possible significantly to increase the rates of work and to raise the level of mechanization of agriculture with respect to the demands of scientific agriculture. On the whole, nationwide, 195,000 hectares of plowed lands were planted in 1958, or one and one half million hectares more than in 1957.

The improvement of the organization of production and the strengthening of the material incentives to the collective farms, as well as the sale of machinery by the machine and tractor stations to the collective farms, led to a significant increase in labor productivity and the quality of the work. The cost of tractor work also diminished. In the Stalin Collective Farm of Kalacheyev Rayon of Voronezh Oblast, for example, the operation of machines cost 300,000 rubles less in 1958 than in 1957 when they were run by the machine and tractor stations. The cost of one hectare of easy plowing was reduced to 17 rubles in this collective farm, whereas in collective farms that were still being served by the machine and tractor stations in 1958, it was 27 rubles.

With the more effective utilization of machinery in the collective farms and the general improvement in the organization of agriculture on that basis, there were created important prerequisites for reduction of all costs of production, including those of labor. This may be illustrated by the following data on the results of work in 1958 in the Kalinin Collective Farm in Poltava Rayon of Poltava Oblast, as compared with adjacent collective farms still serviced by machine and tractor stations:

	Kalinin Collective Farm	Adjacent Collective Farms Serviced by MTS
Labor-day units per centner:		
Grain	1.75	2.32
Potatoes	1.04	1.58
Vegetables	3.11	3.28
Pork	43.0	53.8
Wool	134.0	199.0
Eggs (per 1000 eggs)	20.6	47.9

The past year will go into the history of the upbuilding of communism in our country as the year of major triumphs in the production of grain and of all agricultural produce, and of a sharp upsweep in centralized procurement of agricultural products. Government procurement of grain as of November 1, 1958, was 3.5 billion poods, which exceeds the procurements of 1957 by more than 1.3 billion poods. The sharp upsweep in the other branches of agriculture created prerequisites for fulfillment and overfulfillment of the plans of procurement of all other agricultural products.

The major successes achieved in 1958 in agriculture are intimately interrelated with the reorganization of the MTS,

the raising of the material incentives to the collective farms with respect to further increase in gross grain harvest, and the increase in the portion of agricultural produce made available as commodities. However, as they progressed from planting to cultivation of the plantings and preparation of foods, and finally to harvest work and autumn field work in preparation for the 1959 harvest (spring planting and plowing), the collective farms became increasingly convinced with each passing month that the problem of operation and assurance of uninterrupted functioning of collective farm machines with the assistance of the repair and equipment stations had not yet been completely solved.

Over a long term of years, the government had expended large funds to establish repair facilities in each machine and tractor station. Experience has shown that the machine and tractor stations functioned the more successfully, the better they were equipped with their own facilities for repair of their machines. At the same time, experience showed that it was more profitable to concentrate major overhaul of tractors in large enterprises servicing a number of machine and tractor stations. However, with the reorganization of the machine and tractor stations, it was envisaged that agricultural machines would be concentrated in collective farms themselves, and that the repair shops and garages would be placed in the hands of the repair and equipment stations. The experience of the work done by the collective farms under the new conditions demonstrates, in our opinion, that this system has now already begun to become obsolete. The collective farms today have virtually all the machines required, but they don't have repair shops. As a result, it is still difficult for them to make highly productive use of their equipment and to assure the normal course of production, the most important prerequisite for which is prompt repair of machines and equipment.

Some economists have advanced the idea that concentration of repair work in organizations separate from the collective farms is justified by the fact that the farms of the United States seem to get by completely without their own repair facilities. However, this does not take into consideration specific conditions of agriculture in the USA, where the average farm has about 97 hectares of land and where, according to the census of 1954, 30.4% of the smallest farms produce no marketable produce whatever, while 42.7% of the farms yield marketable products of the value from 250 to 4,000 dollars each. It is natural that dwarf enterprises of this kind cannot maintain their own repair facilities. However, the large farmers of the USA, in whose hands the bulk of the machinery is concentrated, do have their own repair workshops. In addition, less major rebuilding goes on in American than in Soviet agriculture, as they don't regard this as very profitable. The farmers are in a position readily to get any desired spare parts and details. Thus, the great majority of American farms cannot in any way be compared to our collective farms either in terms of the scale of the land available or in terms of the quantity of equipment at hand.

During the nationwide discussion of problems of further development of the collective farm system and reorganization of the machine and tractor stations, some personnel in agricultural agencies advanced the opinion that not only major, average, minor and field repairs to equipment, but even current maintenance should be concentrated completely in the hands of the repair and equipment stations. The experience of the collective farms shows this to have been wrong. Reorganization of the machine and tractor stations on this basis would place the collective farms in a completely unjustified dependence upon the centralized

workshop of the repair and equipment stations, so that the collective farms would have to drive their machines for repair to the RES for every trifle, sometimes distances of tens of kilometers, lose valuable time during the period of field work, and suffer great losses as a result.

The resolution of the Central Committee of the Communist Party of the Soviet Union and the Soviet Cabinet, "On Further Development of the Collective Farm System and Reorganization of the Machine and Tractor Stations," published April 20, 1958, recommended that the collective farms "possess rudimentary workshops to carry out current maintenance of tractors and repair of simple agricultural machinery." However, unfortunately, the necessary material and technical equipment for rapid solution of this problem was not provided to all collective farms by any means. As a result, the equipment newly in the possession of the collective farms often proved to be isolated from the base of repair facilities by which it was formerly serviced, repair of machines and maintenance thereof was rendered complicated, and in many cases became impaired.

Let us cite some instances. The Sopka Geroyev Collective Farm of Krym Rayon of Krasnodar Kray acquired equipment from the Kiev Machine and Tractor Station. However, when, during the planting season, it applied to that MTS for repair of the machines purchased, this was refused. The management of the Kiev MTS, which used every trick in the book to get rid of some of its machines that were not entirely in the best of order, subsequently did not even provide prompt repairs for the machines in non-operating condition that it had sold to the collective farms as allegedly being in satisfactory working order. The Ubezhen MTS of Krasnodar Kray sold the "Road to Communism" Collective Farm a number of machines in unworkable condition, assuring the collective farm that the machines would be brought into proper operating condition. However, no sooner had the MTS been transformed into a branch of the Konokov RES, than it began to ignore the legitimate demands of the collective farm.

There can be no doubt that the reorganization of the MTS and the concentration of equipment in the hands of the collective farms themselves had an enormous positive influence in 1958 upon the harvest, reducing the time required, increasing the gross grain harvest, and thereby improving labor productivity. During the harvest campaign of 1958, the collective farms were in a position for the first time in their entire history to organize the process of harvesting entirely on the basis of a full consideration of all their resources, and to conduct the minute-to-minute management of the work, to assign people and machines where needed in conjunction with changing circumstances dictated by the weather. The need for endless coordination between the collective farms and the machine and tractor stations with regard to such matters as the sequence of harvest work, the method of organizing the harvest, and the placement of people and machines was eliminated. The most important reasons for machines standing idle due to failure to haul water, or fuel, or to provide adequate personnel for harvest machine teams were also eliminated. The fact that the harvest was now run under a single management made it possible to improve not only labor productivity, but the quality of the performance of all the work done, to create more efficient monitoring on the part of the team leaders and the agriculturalists of the collective farm over the process of the harvest. Under new conditions, labor discipline and the material incentive to the machine operators was greatly improved. The payments for the labor of the latter now depend not upon the number of hectares of conventional cropland or hectares of fields harvested, but

upon the crop actually in the barns. This all created possibilities for bringing about a sharp reduction in the period of time during which the harvest was conducted. In 1958, the weather conditions did not favor the grain harvest in most districts of the country, and there were frequent rains during the harvest. Prior to the reorganization of the MTS, this led to long-term interruption in harvest work. When there were two independent bosses on each area to be harvested, a temporary interruption of the work because of poor weather often resulted in stripping of harvest equipment from some teams. When the weather made possible resumption of the harvest, sometimes one found neither harvester combines nor tractor operators on the spot, as they may have been sent home by the MTS management, or collective farmers, who were now engaged on other jobs. The time best suited to the harvest was therefore poorly utilized. In addition, the machine operators of the MTS had no material incentive to rush the harvest work during bad weather, as this reduced labor productivity and increased fuel consumption. Under these conditions, the harvests were stretched out, and crop losses increased.

However, when the equipment was transferred into the hands of the collective farms and selective grain harvesting came into wide use, the situation changed fundamentally. Now, having their own equipment, the collective farms function in a more flexible manner, utilizing this equipment to a considerable degree even during bad weather. The productivity of collective farm labor proves to be higher now in harvest and other work. Thus, in the Pobeda Collective Farm of Severskiy Rayon of Krasnodar Kray, where the actual harvest reached 41 centners per hectare in 1958 over some sections, the harvest of all grains over an area of 3,833 hectares was carried out in 12 working days, for the first time in its history. People worked despite the exceedingly unfavorable weather conditions. In the Zhdanov Collective Farm of Red Guard Rayon of Stavropol Kray, all the grain over 4,785 hectares of land was reaped for windrowing in 9 working days in 1958. Then the collective farm needed 9 more days to thresh all the reaped harvest and to carry out the plan of sales of grain to the government to a total of 57,000 centners. "It may be said without exaggeration," said the collective farm chairman, A. Tolokonnikov, "that so rapid and intensive a harvest as that of this year has never occurred during the entire history of the upbuilding of the collective farms in the village of Novo Mikhaylo. This was true despite the difficult meteorological conditions which made for additional difficulties! In previous years, the harvest dragged out 30 to 40 days under such conditions." As the result of the reorganization of the machine and tractor stations and the introduction of a procedure for procurement, and new prices for agricultural products, this collective farm failed to experience a labor shortage during the height of farm labor for this first time in its history.

The management of a number of RES proved capable of organizing the work in such fashion during the harvest as to assist in the rise in grain production. Thus, in Rebrikhin RES of Altay Kray, in 1958, a number of skilled men from the RES taught collective farm machine operators methods of combining the use of one or two reapers with a harvester combine, and demonstrated the work of such combinations in the fields. Collective farms within the zone served by this RES were provided with spare parts, of which there had been a shortage, in good time, and on such a basis as to successfully reduce trips by collective farm machine operators to the RES to a minimum during the harvest period. The station set up radio communications with all the teams of all the collective farms. The teams

were able to call mobile repair shops, electric welding units, or to order needed spare parts, quite rapidly. The RES made sure that its mobile repair shop served the collective farm machine operators round the clock. The workshop, by its own efforts, organized manufacture of a number of parts in short supply, brought its automotive equipment into proper working order, and utilized it to haul grain, while providing the necessary reserves of fuel and grease to the collective farm teams. The skilled personnel of the station were attached to specific collective farms for the harvest period, the procedures for obtaining parts and for writing orders for repair work begun by the RES were simplified to the utmost. When a long stretch of bad weather occurred, two harvester combines operating in tandem were employed to thresh the moist shocks. The grain was first threshed by the thresher of a drawbar combine, and then re-threshed by a self-propelled combine. All three collective farms in the zone served by the Rebrikhin RES harvested all 25,000 acres of grain into windrows, successfully carried out the threshing of the shocks, and delivered the grain to the government, all within 13 days. The servicing of the collective farms during the harvest was organized in similar fashion at the Nevinnomyaskaya RES, and here the collective farms completely harvested 25,000 hectares in 10 working days. The Petr RES of Stavropol Kray, the Moskalenko RES of Omsk Oblast and a number of others acted similarly.

Unfortunately, many RES did not succeed in assisting the collective farms to organize the harvest in brief periods and without losses, during 1958. The great economic possibilities created by reorganization of the MTS were made use of inadequately in many farms in 1958 because the RES were not able to set up satisfactory repair of collective farm machinery and supply of spare parts thereto. At the beginning of July, only 76.6% of the harvester combines were brought into good repair. 77,000 combines had not been repaired by the time harvest began. The situation was about the same in terms of repair of other harvest equipment. At the same time, many RES were not able to provide repair and equipment servicing of collective farm machines during the harvest itself. The supply of parts in short supply to collective farm machine operators was poorly organized in a number of RES during the harvest. For example, in the Dawn of Communism Collective Farm served by the Topchikhin RES of Altay Kray, a skilled mechanic was desperately needed during the harvest to adjust two self-propelled harvester combines. However, despite the repeated requests of the collective farm chairman, the RES granted this only after energetic interference on the part of the state government. As a result, two harvester combines were out of action for five days. The workers of this RES did not even bestir themselves to organize the provision of the simplest parts to the collective farm machinery operators, and they had to go hunting for them in other rayons of Altay Kray. The Mamontovo RES of the same kray also clearly failed to meet the needs for repair of equipment in preparation for the harvest. The machine operators of the Lenin Collective Farm within the zone served by this RES had to spend time repairing reapers that had been poorly repaired by the station. This was during the harvest time itself. The repair shop of this RES worked no more than four hours a day during the harvest. Many collective farm machine operators came to think it completely useless to attempt to get any service from this RES, as they found that machines were repaired here in too hasty a fashion. The Kiev RES of Nurino Rayon of Karaganda Oblast was supposed to re-equip 18 harvester combines belonging to the 40 Years of October Collective

Farm. The grain had already begun to fall from the heads, and the machines still stood idle in the central yard of the station. Only 11 overhauled reapers were available at this time to take in 12,000 hectares of grain belonging to this collective farm. There were also RES which offered their buildings and equipment to the collective farms during the harvest on the condition that the collective farms themselves repair the harvest equipment with their own personnel.

The progressive RES strive to provide prompt technical assistance to the collective farms in the field as well, sending mobile workshops to the fields as far as possible. However, quite the opposite kind of picture is also encountered. In the zone of Zuevo RES of Kirov Oblast, the collective farms' requests for assistance were satisfied by the RES in 1958 only after a lapse of one to five days, the result being that a large number of machines stood idle during the most intensive period of field work, and consequently, the time required for the work to be performed increases, and losses became higher. Calculations showed that the idleness of a harvester combine or tractor, used in conjunction with a drawbar combine for a single day, would lead to a loss of 10 to 20 centners of grain under conditions in which the yield was 9 to 10 centners per hectare.

The shortcomings in the organization of repairs made for substantial idle time on the part of the tractor fleet during the autumn period of field work as well. This was one of the major reasons for the dragging out of the plowing of fallow in the fall of 1958. However, we know that early plowing of the fallow yields a considerably increased harvest almost everywhere. Thus, for example, at the Ural Government Test Station, 5.9 centners more of spring wheat was harvested from land in which the fallow had been plowed in August than from land that had been plowed around October. In order to get the maximum increase in crop, the fallow should be plowed 15 to 20 days after the harvesting of the grains and the removal of stubble. Therefore, the collective and state farms in our country are attempting to carry these jobs out in briefer periods of time. However, in 1958 the plowing of the fallow was clearly delayed, as is testified to by the following data for October 10, 1958:

	Fallow Plowed	
	Millions of Hectares	Percentage of Plan
RSFSR	35.5	56
Ukraine	9.3	70
Kazakhstan	4.6	24
USSR as a whole	52.0	50

Consequently, on October 10, 1958, when the optimum periods for these jobs had already passed, only 50% of the plowing of the fallow planned had been done. Moreover, the amount of fallow plowed by that date was nearly 18,000,000 hectares less than in 1957, although the number of tractors had increased during this period.

All this bears witness to the fact that after the sale of machinery to the collective farms, many RES workers did not feel a responsibility for added increase in the harvest, inasmuch as their own material position did not depend upon the level of well-being of the collective farms.

Even at those stations whose management and Party organizations had been completely successful in subordinating the activities of their stations to the interests of development of collective farm production, the same tendencies were to be observed among a portion of the personnel.

In a number of cases, collective farm production suffers not only because the workers of the RES do not bear real material responsibility for its results, but also because the RES are not in a complete condition to assist the collective farms promptly in repair machines under field conditions. This pertains primarily to the comparatively small and medium-sized collective farms, particularly those in the non-grain growing regions of the country, where a large number are served by a single RES. Thus, for example, Vëlikiye Luki RES is responsible for maintenance for the machines of 35 collective farms spread over a large territory. All these farms have substantial fleets of tractors and agricultural machines. Tractors alone number 2 to 11 in the various farms. The possibility to which this equipment can be used, and therefore the fate of all work done to the collective farm as a whole, is substantially dependent upon the work of the RES, inasmuch as none of these collective farms has even the simplest repair workshop.

Collective farms having their own repair workshops are in an entirely different situation. In these farms, the harvests went more smoothly, the productivity of labor and the degree of utilization of machines was higher, the harvest was taken in more successfully and with minimum losses. The administrations, team leaders, and machine operators of the teams of these collective farms were completely in a position to prepare, and then in planned and orderly fashion to carry out the full cycle of harvest work, in complete accord with their needs. In the Lenin Collective Farm of Novo-Titarovo Rayon of Krasnodar Kray, for example, the entire crop of grain was taken in in 14 days during that year. 32.5 centners were threshed per hectare, and 33.3 centners were attained over an area of 5,300 hectares of wheat. The state was sold more than a half million poods of grain. Being in possession of all the necessary levers of production, the collective farm organized the harvest process in such fashion as to carry out a harvest of the straw immediately after the grain harvest, and then to till the soil for the next crop. As early as June, following the harvest of winter barley, 800 acres of corn was planted, and by the middle of August 3,000 acres had been worked under the semi-fallow system. Repair of tractors, harvester combines, and machine maintenance operations in categories 3 and 4 are carried out there in central workshops, and maintenance operations of categories 1 and 2 are performed directly in the field teams. This procedure has completely justified itself. Moreover, this year's experience has demonstrated to the collective farms the need for organizing fuel dumps and storage garages in the field camps, as well as small repair shops, the construction of which has already begun.

Small repair shops exist or are being created in the team camps of a number of other collective farms as well. In some advanced collective farms, the team repair shops have already been in existence for a number of years. In such farms, the condition of the machines is usually considerably better, and the expenditures upon current maintenance and repairs are often only one half to one third that in collective farms having no repair facilities for the individual crews. Collective farms which do have simple workshops in their field crews are freed of the need to transport such simple agricultural machines as cultivators, huskers, sowers, reapers, scythes, gleaners, plows, harrows, and the like to RES workshops (or to the central

workshops of the collective farms), and are able to repair them on the spot, so that a considerable economy of labor results. When such machines are repaired in field camps, there is also a reduction in the volume of disassembly, and there is greater care in deciding whether or not to discard parts. All this makes for a sharp reduction in the cost of repair work, and increases its quality. Moreover, repair work is carried out on time, and this makes for uninterrupted utilization of agricultural machinery.

The fact that workshops for the individual teams are becoming a pressing necessity is borne witness to by the experience of the Pravda Collective Farm of Perovo Rayon of Stavropol Kray, which has at its disposal the well-equipped workshop of the former Vystskaya MTS. The co-operative is managing to do all kinds of repairs of tractors and agricultural machinery quite successfully. Repair work is organized on a round-the-clock schedule, and machines are repaired one assembly at a time. This workshop has skilled machine operators and capable management. The collective farm chairman, Comrade A. Belousov, was for many years manager of the Perovo Machine and Tractor Station, which was in the category of exemplary stations. Here, the plans for equipment repair were carried out ahead of time, and with considerable saving of funds. Nevertheless, small repair shops having the purpose of carrying out the necessary repairs of machinery under field conditions were set up in 1959 in all the tractor teams of this farm in order to assure continuous utilization of agricultural equipment.

In our opinion, the experience of these collective farms provides a correct reflection of the tendency to highly productive utilization of collective farm machines, and to increase the technical and economic level of agriculture. A team of today's large-scale collective farms serves a large and varied economy, with several thousand hectares of lands under crop, with large livestock farms, where every conceivable kind of machinery and electrically powered equipment is utilized. In places where minor and medium repairs to machines are performed entirely in centralized workshops of the collective farm or in the RES workshops, machinery is used at lower levels of efficiency, and this reduces labor productivity.

The experience of the collective farms of the Petrov Rayon of Stavropol Kray in 1958 is highly indicative. In this rayon, five collective farms (Dawn, Bolshevik, Sarayev, Daybreak and Truth) acquired not only the machines, but the repair shops of the machine and tractor stations. Each of these farms has an average of 53 tractors. As of January 10, 1959, the entire tractor fleets of these collective farms were already in repair, and the workshops were then rescheduled for repair of harvest equipment, creating prerequisites for successful execution of the planting and harvesting campaigns of 1959. The First of May Collective Farm of this same rayon, which also has its own workshop, has repaired 26 of the 38 tractors in its possession, the remainder being repaired in the RES. It should be noted that the Petrov RES, one of the best in the kray, functions in this rayon. Nevertheless, the collective farm workshops have proven capable of competing very successfully.

Experience shows that the chief advantage of the existence of the repair shops in the collective farms lies in the fact that they are organically tied into collective farm production, are completely subordinated to its requirements, and therefore provide superior utilization of their resources of equipment and personnel. The same holds in other collective farms of the Kuban and of Stavropol, which have their own repair shops.

The experience of these collective farms shows the way

to further improvement of the organization of agricultural production and to increasing the productivity of labor in the collective farms. The practical experience of agriculture, in terms of 1958, has proved that collective farm repair shops are now essential for the carrying out of repairs of minor and average seriousness. Collective farms cannot operate without interruption if they have to stop tractors and harvester combines and send them tens of kilometers to a repair and equipment station for every trifle. Many collective farms are applying all their strength to the job of setting up their own workshops. Some of them are assisted by the councils of the national economy, by sponsor organizations, and by local Communist Party and Soviet agencies. For example, the Stalin Collective Farm of Krym Rayon of Krasnodar Kray is attempting to carry out a merger with the adjacent collective farm, "Sopka Geroyev," so as then to be in a position to set up their own workshops with their own resources. Other collective farms are buying machine tools and organizing small workshops. Still others are seeking to have this problem solved on the scale of general governmental responsibility.

The experience acquired in the work of the RES and collective farms in the period subsequent to the reorganization of the MTS permits the following important conclusions to be drawn. The most important of them is that many RES, in our opinion, do not possess all the prerequisites for assisting collective farms to organize production under the new conditions in the most rational possible way. The concentration of repair facilities in government-owned organizations operated on a cost accounting basis, separate from the collective farms, has in many cases proved not to be in accord with the interests of the work at hand. Moreover, the RES are burdened with an excessive number of functions. They are often at a long distance from the collective farms and are unable to satisfy their daily demands.

The fact is that the RES were created as all-round government organizations to carry out functions both of production and supply, and to provide collective farms with machines, spare parts, fertilizers and other means of production. At the same time, they are supposed to carry out the function of technological inspection, and the monitoring of the work and utilization of machines by the collective farms. They are supposed to give technological assistance to the collective farms, carry out all kinds of repairs of agricultural machinery, conduct the building of roads, drainage and construction work, and also to do work in the collective farms and elsewhere on a contracting basis. Therefore, the RES and their branches were permitted to retain the workshop system that had been set up under the MTS, as well as the transportation equipment, various machines, a portion of the skilled workers and engineering and technological personnel, the idea being that they would become rayon territorial centers of equipment and supply to the collective and state farms, capable of creating conditions for the normal organization of agricultural production and for high-output utilization of machines. In practice, it was proved that this organizational system has its shortcomings.

In a number of cases, RES were established on a stereotyped basis, ignoring the specific situation. Thus, for example, in Pyatigorsk, where there are two large collective farms, an RES with a staff of 177 people was set up, whose salaries cost the government 1,800,000 rubles per year. In establishing this RES, no account was taken even of the fact that there is a plant in Pyatigorsk engaged in the repair of tractor engines. As a result, the equipment of the RES workshop was used to only 25% of capacity in 1958. In order to justify its existence, the personnel of the RES are

attempting to engage in commercial enterprise. From the warehouse of the inter-rayon rural supply depot which is right next door they transport various materials a distance of about 10 steps, and then sell them to the collective farms with a markup of 12%. In Yegorlyk Rayon of Rostov Oblast, the former Cavalry MTS, which served a single collective farm, the Kirov Collective Farm, was transformed into a branch of the Ataman RES, and has the job of continuing to serve the same collective farm. The collective farm for some reason did not decide to buy the MTS workshop, and it went ahead and erected its own central workshop. Now there are two workshops in the collective farm headquarters.

In the establishment of the repair and equipment stations, the idea was that specialization of repair work would make it possible to assure high quality and low cost in the repairing of agricultural machines. This was, as a matter of fact, the most decisive economic justification for the organization of the RES. However, in view of the separation now existing between the machines and their repair institutions, the quality and rates of organization of repairs has, in some cases not only not improved, but has even been impaired. At the same time, the volume of repair work carried out by the RES has been reduced because many types of repair that cannot be postponed must be carried out by the collective farms themselves, and the output capacity of the workshops has actually dropped because a substantial number of the workers who were previously wholly or partly engaged in repair work have returned to the collective farms.

As far as the supply of spare parts, equipment and other means of production on collective farms is concerned, the combination of functions of production and cost in the RES has led to substantial improvements. The RES have been committed to retain the bulk of the spare parts that are in short supply, for purposes of repair. During the most intensive period of field work, this not infrequently resulted in a portion of the collective farm machines standing idle. There are cases in which the RES continued to be sent equipment and machines under arrangements in which they are required to accept them, although the collective farms and state farms in the zone have no need for these types whatever.

The repair of agricultural machines is an exceptionally important function and prerequisite of proper organization of large-scale agricultural production. The repair of agricultural machines is carried out not only in workshops, but in the field camps, and sometimes right out in the field. The major purpose of this kind of work is to assure uninterrupted utilization of the machines and normal functioning of the entire system of collective farm production. This objective can be met most rationally, in our opinion, by concentration of agricultural machines and repair depots in single hands, in which all the equipment and the servicing thereof are subordinated to a single will and serve a single purpose. This solution of the problem is also facilitated by the fact that the collective farms have become even larger in the last year through mergers, and those which a year ago did not have the necessary economic and organizational conditions for the establishment of their own repair institutions, now do possess them.

In order to improve the utilization of agricultural equipment and to bring about a further increase in the level of collective farm and of all agricultural production, it is necessary in our opinion to take a number of economic organizational steps so as to create collective farm and inter-collective farm repair workshops in the years immediately ahead, and to organize free trade in machines, spare parts,

etc. It is also necessary to set up production of spare parts in complete accordance with the requirements of agriculture, as otherwise a portion of the machines in the collective and state farms actually stands idle. The repair of complete assemblies and sub-assemblies of tractors, automotive vehicles, etc., has to be concentrated not in the workshops, but in special repair plants equipped with assembly lines.

Therefore, in our opinion, it is also desirable to sell the workshops to the collective farms on about the same conditions as the machines owned by the machine and tractor stations were made over to them. The bulk of the repair shops now in possession of the RES should provide the basis for the establishment of collective farm and inter-collective farm repair shops. In addition, it is necessary to expand and strengthen the network of government owned repair plants and inter-district major overhaul plants. It goes without saying that the sale of the RES repair shops to the collective farms must be done on a well-thought-out basis, gradually, and with the fullest consideration of specific circumstances. In some cases they may be sold to a single collective farm, and in other cases to a group of collective farms which would use this as a basis for inter-collective farm workshops. Where the existence of the RES has proved justified (the Petrovo RES and others), they should be preserved. The government should retain control of the largest repair bases, serving numerous collective farms and state farms with major overhaul — chiefly those plants and inter-rayon major overhaul shops currently transferred to the councils of the national economy and presently unfortunately employed largely in carrying out orders of an accidental character. The collective farms should have repair shops under all circumstances. These shops should, depending upon specific business conditions, carry out either minor and average repairs, or all kinds of repairs.

The large government and inter-collective farm workshops servicing many collective farms should set up a rotating fund of machine parts, and even of entire machines (tractors). This procedure is used with great success at the Petrovo RES, where about a million rubles has been set up to maintain this rotating fund. A collective farm will deliver a motor or tractor for major overhaul, and will be granted the use of another machine of the same type in exchange, while it will pay the station the cost of the repair. The personnel at this station had calculated that, to serve their nine collective farms, they need not more than nine tractors of the greatest diversity of models, in their

rotating fleet. This progressive practice should find wide use in the years immediately ahead.

In our opinion, this solution of the problem would assure utilization of agricultural equipment with the greatest productivity. Collective farms possessing workshops will be able to control their own activities to a maximum degree. In this connection, two more important considerations must be borne in mind. In the first place, under these conditions, more favorable conditions will be established in the collective farms for complete and rational utilization of all machinery-operating personnel in agricultural production, and during the period of high-intensity seasonal farm work, all machine operators will be serving agriculture in one form or another, while during the rest of the year they will all or nearly all be transferred to repair work and assembly in connection with further mechanization of highly laborious production processes in agriculture. This will make for an improvement in the level of skill of mechanical personnel and in the degree of their interest in the results of production and in improving the work of repair. In the second place, transference of the RES repair shops and mechanics to the collective farms will create the most favorable conditions for completion of all-round mechanization of agricultural production, as one of the important causes of the low level of mechanization and electrification of work in livestock farming and other labor-consuming fields is the shortage of skilled technical personnel in the collective farms. It should also be borne in mind that efficient mechanization of work in livestock farming with personnel, repair agencies and organizations having inadequate ties to the collective farm livestock farms themselves, is complicated. The persons, organizations and funds serving the mechanization of agriculture should be an organic part of this production and subordinate to a single will. Further improvement of the organization of repair work in agriculture in accordance with the new demands in agricultural production is a necessary condition for an important rise in the economies of the collective farms during the current seven-year plan. Reinforcement of the facilities available to the collective farms for purposes of repair will make it possible to increase the efficiency of utilization of collective farm equipment and the productivity of the labor of the collective farmers, and to reduce the costs of agricultural production. This will make for a further development and perfection of agricultural production in accordance with the new tasks posed by the 21st Congress of the Communist Party of the Soviet Union.

G. Prudensky:

Problems of Accounting of Non-Working Time

Marx noted that in Communist society the measure of wealth would be not working, but free time. It goes without saying that under present-day conditions, working time, the rational utilization thereof, the saving thereof, and increase in the productivity of labor are of first-rank importance. Nevertheless, even today, planning and business agencies, membership organizations and scientific institutions are faced with a number of problems having to do with assuring the rational utilization of nonworking time. This is why it is necessary to examine some problems having to do with nonworking time, including free time, the source of further increase in such time, and method of analysis.

The Communist Party of the Soviet Union is manifesting unflagging concern for improvement in the conditions of labor and the life of Soviet people. One of its programmatic objectives has always been a struggle to reduce the working day.

On October 29, 1917, the fourth day after the October socialist revolution was triumphant, a decree of the Soviet government was published titled "On the Eight-Hour Workday." The Eighth Congress of the Russian Communist Party of Bolsheviks, in approving the Party program, pointed out that "the Russian Communist Party must pose itself the objective of establishing a maximum six-hour working day without reduction in compensation for labor, under conditions of a general increase in labor productivity..." (1)

The triumphs recorded in the development of our country's national economy during the first ten years of the Soviet government made it possible to begin a gradual transition from the eight to the seven-hour working day, in 1927. However, the worsening of the international situation in 1939-1940, and the problem of accelerating the development of all branches of the national economy under the level of productive forces and distribution of personnel then available, made it necessary to introduce the eight-hour day in 1940.

At the present time, as a result of successful fulfillment of the plans of the post-war five-year plans, the pre-war level of development of our national economy has been substantially exceeded, and the economic power of the Soviet government has grown stronger. Thanks to this, the conditions for transferring workers and office workers to a seven-hour working day have again arisen. In recent years, a number of important measures have been taken to reduce the length of the workday: the workday has been cut by two hours on the day preceding the weekly day off and on days prior to holidays. A six-hour workday has been set up for juveniles of 16 to 18 years of age. A shortened workday has been introduced in a number of enterprises in various branches of industry.

The target figures for the development of the national economy of the USSR in 1959-1965 envisage transfer of workers and office workers in 1960 to a six and seven-hour workday, and, in 1962, the shift of workers and office workers from a seven-hour working day to a forty-hour workweek. Beginning in 1964, a gradual shift of workers and office workers to a 30-35 hour workweek with two off

days will be begun. As a result, the USSR will have the shortest workday and shortest workweek.

Reduction in the working day under conditions of socialism is based on a continuous rise in labor productivity, the introduction of advanced technology and process procedures in all branches of industry, and an increase in labor discipline and improvement in the organization thereof. V. I. Lenin emphasized the indissoluble connection between reduction of the workday and increase in labor productivity. He pointed out that as a result of a conscientious account of production and consumption, of the saving of labor and a continuous increase in its productivity, the possibility would arise, in a socialist state, of reducing the workday to seven or six hours, or even less. (2)

Rise in labor productivity and saving of working time are basic sources for the creation and increase of free time. In turn, the existence of free time, permitting personnel to give more attention to increasing their general and specialized knowledge, has a direct influence upon the further growth of labor productivity. "To save working time," wrote Marx, "is equivalent to increasing free time, i.e., time for that full development of the individual which, in turn, as a most tremendous force of production reacts upon the productivity of labor. From the viewpoint of the immediate process of production, this saving may be regarded as the production of fixed capital; this fixed capital is man himself." (3)

In socialist society, the law of continuous growth of labor productivity applies. Thanks to the advantages of the socialist economic system, labor productivity in the USSR rises more rapidly than in capitalist countries. In 1958, labor productivity had risen approximately ten-fold over 1913 in Soviet industry. Consistent realization of technological progress, improvement in the organization of labor and of production will assure a further continuous increase in labor productivity in all branches of the national economy. During the seven-year plan, labor productivity in industry per worker will rise 45-50%, while it will be rising 60-65% in construction, 34-37% in railway transport, 60-65% in the state farms, and approximately 100% in the collective farms. Thus, the uninterrupted growth in labor productivity in the USSR will make for one of the most important conditions of further rise in the free time of the working people. Under these conditions, there will be a simultaneous increase in the significance of saving working time in every possible way and utilizing it most effectively, and in increasing labor productivity as a requirement for increasing the time for recreation, for spiritual growth and the all-round development of the working people.

The formation and increase in free time under socialism is interrelated with the matter of the involvement of all in work. "In capitalist society," wrote Marx, "the free time of one class is created by converting the entire life of the masses into working time." (4) Under the conditions of capitalism, the development of the forces of production makes it possible for the ruling classes to conduct an ever more extravagant way of life. As labor productivity rises,

the surplus working time increases, and the degree of exploitation of the workers rises. Marx showed that the tendency of capitalist development is, "on the one hand the creation of free time and on the other the conversion of this free time into surplus labor." (5) The more uniformly distributed is labor among all the members of society capable of working, the less are the possibilities for one social stratum to shed and to load upon another social stratum the natural requirements that labor be done, and the greater is the remaining free time for public activity and recreation. From this point of view, as Marx pointed out, the absolute limit for reduction of the workday is presented only by rendering labor as a universal obligation.

Socialist society is the first in the history of man to proclaim the uniform obligation of all to participate in social labor. This created one of the most important conditions for the formation and growth of free time.

A necessary prerequisite for increasing free time is the unswerving increase of the material living standard under socialism. In capitalist society, the unemployed man is free of work, but this "freedom" is hateful to him, because along with the loss of work he also loses the source of means of existence. The reduction of real wages compels workers to increase their working day if this is possible. Capitalist propaganda represents this in its customary distorted form. Thus, the British journal, *Engineering*, Number 29, 1957, p. 66, writes in an editorial article, "Through the trade unions, people are attaining a shorter workday. Further, they don't have a clear idea as to how to use this additional free time... It would be better for our country and all its citizens if each man were occupied on his job for a considerably longer period of time and were able to earn more money."

Contrary to capitalism, socialism sees increasing free time result from reduction in the working day, accompanied by an increase in the real wages of the workers.

In connection with the measures outlined by the 21st Congress of the CPSU toward a further reduction of the workday and workweek, there will be a considerable rise in nonworking and, in particular, in free time. Even today, nonworking time is 70% to 75% of the total time of the working people. In the years immediately ahead it will attain 80-85%. In other words, more than four-fifths of the lives of the working people of the USSR will consist of time devoted to nonproductive activity. Therefore, it is necessary to solve a series of problems having to do with the rational utilization of nonworking time. An investigation of these problems is of major theoretical and practical significance. However, our science of economics has not given them adequate attention until now. In the present article, we should like to examine certain aspects of the problem of nonworking time: one of the most important problems of the upbuilding of communism.

To begin with, it is necessary to differentiate the concept of nonworking and free time. In this connection, let us examine the sector of time at the disposal of the worker. In its general form, this time fund consists of two major components: working time and nonworking time. The magnitude of the former is determined by the length of the workday. The rest of the time is nonworking time. However, can it be regarded as completely free? In our opinion, no. In the first place, a considerable portion of the nonworking time is expended upon certain natural needs of man, sleep and eating. In the second place, there is the time that goes to housework. These time expenditures are particularly great in the case of working women who have underage children. It goes without saying that these portions of nonworking time cannot be considered to be free time. The

remainder is free time in the direct sense of the word, as the working person is able to spend it at his own desire (in public activity, recreation, education, etc.).

Consequently, the nonworking time of the working person consists of three essential components:

- (1) The time spent on housework,
- (2) Time spent in satisfying natural physiological needs, and,
- (3) Free time.

If it be taken into consideration that the time utilized to satisfy the physiological needs of man cannot usually be reduced, this means that free time as such can be increased within the framework of the nonworking time chiefly by reducing the time expended in housework. However, we cannot limit ourselves to examining this question only in the most general form. We know that each person spends his time budget in carrying out a variety of functions. Therefore, in a complete study of the time budget of the working man, nonworking time must be differentiated. In addition to the time expenditures listed, it is necessary to consider regular time spent in transportation, in shopping, etc.

To study the problem of nonworking time, and in particular that of free time, it is necessary to organize a mass investigation of the time budgets of working people. In this connection, an interesting experiment which does, it is true, date to a fairly distant period, should be studied. This experiment has been illuminated in the works of S. G. Strumilin, member of the Academy.

S. G. Strumilin has shown that value indices cannot be used to measure nearly everything, even in the area of the workers' living standards. It is also necessary to calculate time expenditures in production and in daily life.

In one of his latest books, collecting his works in the field of labor economics (6) Academician Strumilin devotes a special section to problems of nonworking time, titling it "Toward a Study of the Way of Life of the Working People of the USSR." In the elaborations of time budgets of peasants, workers and office workers advanced in this book, the structure of the fundamental working time is defined by a three-term formula: labor — recreation — sleep. At the same time, the author does not limit himself to the workday spent in work for wages. He also includes housework and so-called free labor, that is, the time spent on improving oneself and public activity. The author gives much attention to the position of women engaged primarily in housework.

In his article "The Time Budget of the Russian Peasant," S. G. Strumilin describes the major methodological peculiarities of study of the time budgets of persons engaged in agriculture. He examines the time budget in winter and summer, on workdays and on holidays, and makes separate studies of the expenditure of time by the head of the family, the housewife and other members of the family. Comparison of the time budget of peasants of 1923 and 1934 permits him to discover the significant shifts and progressive changes in the way of life of the peasant coming as a result of collectivization and the carrying out of general governmental measures to raise the cultural level of the working people. Suffice it to say that in 1934 the time spent by the collective farmer for study, the reading of literature and public affairs was 11 times as great as that spent on the same activities by the individual peasant in 1923, while the time spent in religious ceremonies was only one ninth of what it had been. The data advanced in Comrade Strumilin's work provide convincing indication of the rapid rates with which the cultural revolution occurred during these years, and in which the consciousness of man changed under the conditions of a new, socialist life.

In analyzing the time budget of the Russian worker in 1922, S. G. Strumilin also proceeds from his three-term formula. Here the author raises an important question: that of the worker's work at home which is less productive and less efficient than his work on the job. He found that 42.4% of the time spent at home went to the preparation of food. By a series of calculations, S. G. Strumilin shows that rationalization of housework (broad dissemination of public catering, increase in the number of kindergartens and day nurseries) would make it possible to save a minimum of three hours per day for each woman — worker and houseworker — on only two items in the household time budget (cooking and caring for the children). The studies of workers' time budgets made in 1922 made it possible to advance a number of important problems with respect to the rationalization of labor in the household life of the worker.

In studying the time budgets of office workers, S. G. Strumilin also proceeds from the structure of the time budgets, with consideration of time spent on various elements of labor, recreation and sleep.

In the investigations of workers' time budgets, set forth above, the time spent in transportation and in waiting in line in a cafeteria was set aside in the questionnaire, inasmuch as these items may be ascribed to one or another of the major groups in the budget, for example, the time spent in going to and from work may be classified with the time in productive labor, while the time on waiting in line in cafeterias can be assigned to eating time, etc. The separation of these superimposed time expenditures, and subsequent analysis thereof, is of significance for today's time budget studies as well, particularly where these types of services to the working people are organized poorly.

The studies of S. G. Strumilin have shown how important a role is played by the development of time budgets for workers in analyzing their living standards. Studies of these budgets make it possible to discover a number of important aspects of the way of life of the working people. At the same time, it yields material for analysis of the organization of commerce, the catering industry, the upbringing of children, cultured recreation, etc.

It is also necessary to take note of an interesting attempt to elaborate time budgets for working people undertaken by the statistical agencies in 1936. Unfortunately, of the materials of the time budget investigation of 1936 all that remains is the form set up for the time budgets of factory workers as prepared by the TsUNKhU of the State Planning Commission of the USSR. The highly detailed charts describing this investigation, as it pertains to time budgets, embraced, not only detailed inquiries about the family being surveyed, but 98 questions falling into the following 11 groups: (1) productive labor, (2) work to serve one's own family, (3) travel and shopping, (4) work in serving oneself, (5) recovery from illness, (6) education and independent study, (7) participation in public affairs, (8) physical culture and sports, (9) amusements, (10) rest, (11) other time expenditures.

We are also aware of a few partial studies of time budgets, such as those of the time of Party personnel. Some higher educational institutions have elaborated time budgets with the object of discovering the amount of time students spend in independent study, etc. Thus, in order to organize a mass study of the time budgets of working people, past experience would indicate that the work of S. G. Strumilin should be taken as the major point of departure.

There is no need to demonstrate the vast importance of studies of time budgets of working under present-day conditions, when the Communist Party is carrying out a broad program for raising the living standard of the working

people. At the same time, it is necessary to combine investigations of family incomes and expenditures, and their time budgets. This would serve a serious basis for scientific investigations of the living standard of the Soviet people and for elaboration of measures for further increasing their material well-being. It is evident that mass surveys of this kind, embracing various portions of the country, various groups of working people and various branches of the economy, can be undertaken only by our statistical agencies. It is desirable that they be conducted regularly and in accordance with a specific system. Moreover, it is very important that regional studies of the time budgets of working people take place in various economic districts and towns with the active participation of such mass organizations as the trade unions, the Young Communist League, etc. This would make for a more concrete study of the problem of the actual utilization of the nonworking time by various categories of working people in the given district. Such regional studies could serve as the basis for concrete measures to improve the living conditions of the population, to organize trade and public catering, civic and personal services, the operation of cultural institutions, etc.

Regional studies of the conditions of life and time budgets of working people of particular enterprises and fields of production may have another object as well. For example, they can be used to establish the influence exercised by the actual use of nonworking time upon labor productivity. The relation between utilization of nonworking time and labor productivity has as yet had very limited study. Elaboration of time budgets of working people may assist in mobilizing additional resources for increasing labor productivity.

Studies of the time budgets of working people would be an important condition for a profound investigation of the problem of free time under socialism and in the period of all-out upbuilding of communism. Finally, in elaborating this problem, it is impossible to proceed only from the standpoint of time budgets, although they do make it possible to determine, to an adequate degree of concreteness, the measurable magnitudes of certain components in the expenditure of nonworking time.

Taking into consideration the high importance of analysis of the time budgets of working people, the Institute of Economics and Organization of Industrial Production of the Siberian Branch of the USSR Academy of Sciences, basing itself upon past experiences, carried out some experimental work in 1958. It investigated more than 300 time budgets of workers in two enterprises in Novosibirsk: the electro-thermic equipment plant, and the plant named for the Central Committee of the Trade Union of Clothing Workers. Whereas these budgets, developed by various methods (because it was only an experimental and preliminary work), do not permit the drawing of major generalizations, and are not at all typical because they do not embrace sufficiently large numbers, nevertheless they are of substantial interest. To begin with, analysis thereof provides the basis for asserting that significant changes have occurred in time budgets of workers since 1922-1924. They relate to the enormous changes in our country's economy, and in the material position of Soviet people. Today, the working people spend less time at housework and more on rest, study, and self-study.

Moreover, the investigation performed provided a basis for discovering a number of shortcomings in services to working people. Thus, working people and office workers spend a great deal of time each day in going to and from work. The time spent on housework is still quite considerable, and shopping time constitutes 18.4% of this

category, cooking time 21.1%, looking after children 10.1%, and repair of clothing 7.1%. Saving of time spent in housework will make it possible to increase substantially the free time available to working women, particularly those having young children.

The following method of studying the time budgets of working people was adopted at one enterprise. A photographic study of a working day was made after the development of the budget of nonworking time from the preceding day. This method of study, experience showed, makes it possible to determine the relationship between labor productivity and factors affecting it but falling into the category of nonworking time.

The studies of Academician S. G. Strumilin and the experiments in time budget studies made in 1958 by the Institute of Economics and Organization of Industrial Production of the Siberian Branch of the USSR Academy of Sciences, and also by the Labor Research Institute in Moscow, confirm the need for extensive and systematic study of the time budgets of working people. Study of this type will make possible analysis of important aspects of the life of the working people, discovery of hidden reserves for improving labor productivity, having to do with more rational utilization of nonworking time and determination of methods of increasing the free time of the working people.

The first attempt to elaborate time budgets for working people conducted in Novosibirsk made it possible for us to formulate definite methodological propositions on the structure of the time budget and classification of time expenditure, differing from those used in the past. In our opinion, the total time fund per day, week, month or year should be divided into the following group of expenditures:

- (1) Working time (including time of actual work, shut-downs and unproductive expenditures of working time and controlled breaks in work),
- (2) Other time expenditures having to do with work on the job (the dinner break, and also travel to and from work),
- (3) Time spent on housework and taking care of oneself (shopping, cooking, caring for children, cleaning the house, taking care of furniture, clothing, shoes and underclothes; this also includes time spent in serving oneself in other types of housework),
- (4) Sleeping and eating (time for sleep during the day and night, and for eating), and,
- (5) Free time (study and increasing one's job skill, public affairs, self-study, recreation). (7)

In previous budget studies, the time taken for eating was

classified either with rest (as was the case with S. G. Strumilin), or with self-service (the budget form prepared by TsUMKhU in 1936). We believe that eating, as a natural physiological function, and sleeping, cannot be classified as free time.

Rational utilization of nonworking time, and an increase in true free time, is affected vastly and to an ever increasing degree by realization of the measures outlined by the Party in increasing the role of the government in the upbringing of children (expansion of the system of kindergartens and day nurseries, boarding schools, etc.), toward further development and improvement of the catering industry and of household services for the population. A realization of these measures, and the creation of ever more favorable conditions for raising the cultural level of the working people (development of correspondence and evening education, reorganization of the general school system, increasing the system of libraries, theatres, motion picture houses, the development of television, etc.) will make for maximum utilization of the increasing amount of free time by each Soviet man for his all-round development.

Elaboration of problems of nonworking time should occupy an important place in investigations of scientific organizations and faculties of the social sciences, particularly economics. These investigations serve the purpose of creating conditions for continuous improvement in the material and cultural level of the working people, and the revelation and utilization of resources for further improvement in labor productivity.

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- (7) Points 2, 3, 4 and 5 fall into the category of nonworking time.

E. Bregel:

Contemporary Bourgeois and Reformist Theories of Inflation

During the period of the general crisis of capitalism, the inflationary disturbance of the circulation of money is a virtually chronic one. Only during the few years of relative stabilization of capitalism (1924-1928) was the gold standard in existence, and even then in "truncated" form — in the form of so-called gold ingot and gold note standard. The rest of this period — several decades, starting with the beginning of World War One — is characterized by the circulation of unconvertible banknotes and paper money

constantly declining in value. The inflationary increase in the mass of paper money and the drop in the purchasing power of capitalist currencies is particularly typical of the present stage of the general crisis of capitalism. During the past twenty years, the mass of money has increased to a considerably greater degree than the volume of production, and the purchasing power of capitalist currencies has dropped sharply. This is vividly demonstrated by the following table:

Increase of Money Volume and of Commodity Prices in Capitalist Countries*

	Volume of money in circulation (billions of money units)		Total of demand deposits (billions of money units)		Indices for 1957 (1937 = 100)			
	1937	1957	1937	1957	Volume of money	Deposits	Industrial production	Wholesale prices
USA	5.6	28.3	24.0	110.3	505	460	233	210
England	0.5	1.9	1.2	3.8	380	317	152	339
France	112.0	3,268.0	76.0	3,809.0	2,918	5,012	195**	3,214
Italy	18.0	1,956.0	19.0	3,285.0	10,867	17,290	219**	5,787
Japan	2.6	869.0	3.7	1,162.0	33,423	31,405	202	29,167

* Table compiled on data of International Financial Statistics, July, 1958; Statistical Yearbook, 1957; Monthly Bulletin of Statistics, July, 1958; Economic Statistics of Japan, 1957. The volume of money and bank deposits is given in dollars for the United States, pounds sterling for England, francs for France, lira for Italy, and yen for Japan.
** 1938 = 100

The monopolist capitalist class and the capitalist governments are making wide use of inflation as a means of increasing the exploitation of the masses of the people, and as one of the means of assuring high profits to monopoly, and further, as a specific method of financing the enormous military expenditures of the imperialist powers. Inflation has a negative influence upon the development of the national economy, a disastrous effect upon the position of the working class, and leads to an exacerbation of the contradictions between labor and capital. It is quite natural, that, as one of the most painful ulcers of modern capitalism, inflation attracts particular attention. However, capitalist economists are concerned with the problem of inflation not with the object of discovering its essence and establishing its real causes, but in order to conceal them. In distorting the consequences of inflation, they attempt to demonstrate that it has a positive influence upon the entire process of capitalist reproduction. A number of capitalist economists even assert that inflation is capable of assuring "eternal prosperity" to capitalist production.
Every theory of inflation has to answer at least three questions:
(1) What is inflation and wherein lies its essence?
(2) What are the causes of inflation?
(3) What are its economic and social consequences?

It is in these three aspects that we shall subject modern capitalist and reformist theories of inflation to critical analysis.
Capitalist Definitions of Inflation
Inflation is typified by the following major characteristics:
(1) A clogging of the channels of circulations by an excess mass of symbols of value (paper money or unconvertible banknotes),
(2) A resultant devaluation of paper notes relative to gold and a drop in the purchasing power thereof with respect to commodities,
(3) Extraction of a portion of the national income, in camouflaged form, to finance expenses (chiefly for military purposes) of the capitalist state, and,
(4) A redistribution of the national income due to the devaluation of money, and a redistribution of wealth in the favor of the exploiting classes and to the detriment of the masses of working people.
Capitalist economists usually distort the essence of inflation and gloss over its characteristics.
Vulgar political economy does not reveal the essence of economic processes, but deals only with the external forms

of their phenomena. In the theory of inflation, this is expressed chiefly by identifying inflation with increase in commodity prices. For example, the American economists Lutharinger, Chandler and Cline assert that every increase in prices, no matter what its character and causes, constitutes inflation. "Any period in which the price level rises, whether this change is secular, cyclic or irregular, is a period of inflation." (1) The Swedish economist Bent Hansen declares, "When we speak of inflation, we usually associate increase in prices therewith..." (2) The English economist A. Enthoven writes, "The word 'inflation' used in the pathological sense means either a period of general price increase, or the presence of conditions which increase prices in the absence of external factors such as direct control." (3)

The scientific lack of foundation of the concept of identifying inflation with price increases lies primarily in the fact that it glosses over the significant differences between rise in prices due to the inflationary issuance of paper money and price rises due to completely different causes. Other than the overfilling of the channels of circulation by excess amounts of paper money, the causes giving rise to rises in prices include:

- (1) A drop in the value of precious metals,
- (2) An increase in the value of commodities,
- (3) A raising of prices by monopolies,
- (4) An increase in the demand for goods under conditions of the cyclical rise of capitalist industry, and,
- (5) An excess of demand over supply in view of a number of other circumstances (the effect of seasonal and other factors).

Capitalist economists, however, who reduce all cases of price increase to the single concept of "inflation," thereby distort the meaning of this concept and confuse such diverse phenomena as price increase due to increase in labor productivity in the gold industry, and price increase due to excessive issuance of paper money. How can one fail, in this connection, to remember Engels' ironic remark to the effect that one may, if one wishes, call a shoebrush a "mam-mal," but this isn't going to make it grow mammary glands.

To identify inflation with any price increase in general merely distorts reality, serves a bourgeois apologetic class purpose, and is not justified either in logic or by history. To begin with, when the problem is understood in this way, inflation is torn away from the matter of circulation of paper money. In essence, if an increase in prices is inflation (and price increases were often observed even when the gold standard was in force), then the result is that inflation is not something inherently fated to the circulation of paper money, but is entirely capable of existing under conditions of the gold standard. From this it follows that metal money is no better than paper money, inasmuch as both are subject to inflation. Thus, capitalist apologists for paper money strive to erase the significant difference between the relatively stable gold currency and paper money which is systematically losing its value.

Further, by placing price rises due to excessive issuance of paper money on a par with price rises in the phase of the industrial upsurge, and by identifying them with inflation, capitalist economists strive to depict the change in the phases of the industrial cycle (boom and crisis) as merely a sequence of inflation and deflation. They attempt to explain the cyclical fluctuations in capitalist production by the action of monetary factors, and in the long run, they enunciate the fundamentally erroneous idea that it is possible to overcome crises within the framework of capitalism by "regulating" monetary circulation and prices.

Along with defining inflation as increase of prices, we encounter another definition of inflation among bourgeois economists, i.e., that it represents excessive demand. J. M. Keynes wrote, "When a further increase in effective demand ceases to lead to an increase in production, but is completely exhausted by an increase in the unit of cost, strictly proportional to increase in effective demand, we have attained a situation which one may quite properly call genuine inflation." (4) B. Hansen also identifies the definitions of inflation as rise in prices and as excess demand. In his book, cited above, he writes: "Inasmuch as the cause for price increase may be deemed to be excessive demand, we may take it that inflation signifies (among other things), the situation in which there is a 'extensive' excessive demand on the markets for many individual commodities." The German economist Giersch, who associates himself with Hansen's point of view, writes, "Inflation is a series of circumstances (a process), in which an excess of demand exists (an inflationary breaking point)." (5)

Today's reformists have borrowed the definition of inflation from the capitalist economists. They identify it with excessive demand for commodities. For example, the ranking Laborite politician and ideologist, former minister in the Labor Government, John Strachey, calls attention in his latest book to the "inflationary difficulties" from which England suffers, and explains them by the fact that there is presently "a tendency to excessive, and not to inadequate, demand." (6) Another Labor theoretician, Crossland, also dealing with inflation as excessive demand, writes, "Complete employment is converted into inflation, if demand exceeds supply at current prices on the most important markets." (7) Actually, Crossland virtually repeats, word for word, the definition of inflation given by B. Hansen.

All the objections stated above to identification of inflation and price increase pertain to the matter of excessive demand. The latter is not necessarily related to the circulation of paper money, whereas inflation describes, specifically, a particular state in the field of the circulation of paper money. Excessive demand may arise completely independent of monetary factors. For example, it is typical of the phase of industrial boom. Therefore, when inflation is identified with excessive demand, one again winds up with the notorious "gold" inflation, invented by capitalist economists, and the transformation of inflation into an obligatory phenomenon of the industrial cycle, or in other words, the same distortions of which we spoke above.

The description of inflation as price increase and as excessive demand are not always identical. Thus, the American economist A. Lerner, in defining inflation as excessive demand, does not agree with the definition thereof as price increase. He founds this on the idea that there exists not only a "patent," but a "suppressed" inflation, which he calls suppression, and which, in his words, is characterized by the persistence of excessive demand and the absence of price increase due to government control of prices. Presenting a subjective, psychological treatment of inflation, Lerner regards "excessive demand" not as increase in demand over supply in general, but only an increase in which people are fooled in their calculations, and a spread develops between the expected and the real prices, or between the expected and real purchases. "The essence of inflation," he writes, "consists in an excess of demand, an expectation or propensity to buy more than is available, and this must necessarily result in disillusionment and the collapse of plans." (8) This subjective psychological treatment of inflation is completely lacking in foundation. The matter is not whether or not "economically potent

subjects" foresaw or failed to foresee increase in prices and other inflationary phenomena, but whether these phenomena exist in reality regardless of people's consciousness and will. The elemental nature of production and circulation under capitalism eliminates the possibility of precise forecasts of demand and price dynamics. In any industrial cycle, unforeseen increase of demand over supply is observed in the boom period. Consequently, Lerner concludes that inflation is an obligatory fellow traveller of the industrial cycle and is not dependent upon disorders in circulation of money.

The capitalist analyses of inflation, which is regarded as an increase in prices and excessive demand, have the object of understanding the limits of the concepts of "inflation," that is, of including a broader range of economic phenomena.

There is also a third treatment of inflation; under this, inflation and excessive increase in any economic phenomenon is called inflation. Thus, the English economist P. Einzig (who is also generally inclined to identify inflation with price increase) lists twelve different kinds of inflation, among which one finds "inflation of monetary circulation," "inflation of credit," "inflation of purchasing power," "budgetary inflation," etc. (9) However, some capitalist economists use the term inflation not only with respect to monetary circulation and prices, but with respect to the most various economic phenomena. They even speak of "capital inflation," "inflation of production," etc. Above we have already demonstrated the lack of foundation of the definition of inflation as price increase and as excessive demand. However, when inflation is taken to mean an excessive increase in any economic phenomenon, then the stupidity of the definitions of bourgeois economists attains its apogee. In the first place, economic analysis is replaced by a philological treatment of the term "inflation," arising out of the Latin word "inflare," which was originally applied to pathological changes in the living organism. In the second place, to regard inflation only as excessive growth deprives it of all meaning. When inflation is treated in this way, it completely loses any qualitative definition and becomes a purely quantitative phenomenon. However, if one employs so hopeless a handling of words, then, if we rephrase the capitalist economists, we would have to say that "inflation" obviously becomes "deflation" of common sense.

A general characteristic of the three definitions examined is the fact that an expansion of the sphere of phenomena under the concept of "inflation" is attained by impoverishment of the content of the concept and by direct distortions of its meaning.

Bourgeois political economy also provides other treatments of inflation. In 1917, the Austrian economist F. Bendixen wrote that inflation is "a violation of the equilibrium between the appearance of commodities and the development of money." (10) Here, inflation is regarded as an excess of money. Similar definitions may be encountered in capitalist literature of today. For example, the German economist Hoepker-Aschoff writes, "Inflation is a dynamic phenomenon in which ever greater means of payment appear, and the multiplication of the means of payment and the increase in prices reinforce each other." (11) In the 1951 edition of the *Encyclopaedia Britannica* we find that "inflation is an abnormal increase in the quantity of purchasing power."

The definition given by a number of British economists are similar to the foregoing concept of inflation. Thus, for example, R. Hawtrey writes, "Usually an increase in prices is taken to be identical with inflation. However, excessive

expenditures underly the rise in prices and precede them." (12) In this connection he explains that when he speaks of "excessive expenditures" he means expenditure of "such a quantity of money as exceeds actual income, and that this occurs when an excessive quantity of money is issued." D. Patinkin also speaks of "the inflationary pressure created by an increase in the quantity of money." (13)

To define the concept of inflation as an excess of money is more to the point than the definitions listed previously, as this does refer to one of the characteristics typical of inflation. However, this also suffers from significant shortcomings. In the first place, from this it is not clear what kind of money is available to excess. We know that inflation is something to which only notes are subject, whereas capitalist economists propagate the viewpoint that metallic money is also subject to inflation. In the second place, this definition, like the preceding one, does not disclose the class essence of inflation. This last factor requires special attention. An emasculation of the class nature of inflation is a general and fundamental characteristic of all the theories of inflation disseminated in the bourgeois literature. In their definitions of this economic category, the bourgeois economists ignore its class nature. They reduce inflation not only to the presence of an excessive amount of money in circulation, but also to excessive demand leading to an increase in commodity prices. The class essence of inflation lies in the fact that the devaluation of the currency due to a clogging of the channels of circulation by symbols of value carried with it a redistribution of the national income and of the national wealth in favor of the exploiting classes and against the interests of the masses of working people. However, the bourgeois economists do everything they can to gloss over this most important characteristic of inflation, and do not include it in their "definitions."

The Problem of the Causes of Inflation

The origin and development of inflation are conditioned primarily by the mass war expenditures of the capitalist governments in the epoch of imperialism and general crisis of capitalism. The preparation for and carrying out of imperialist wars demand enormous expenditures, which are covered by the capitalist governments not only by increasing taxes and the floating of loans among the population, but also by the issuance of excess quantities of paper money. The bourgeois governments do this either by direct issuance of notes, or indirectly by taking loans from the banks of emission, which in turn emit a mass of non-convertible banknotes to finance the enormous war expenditures. The additional, inflationary demand for commodities due to the excessive emission of paper notes leads to a greater or lesser increase in commodity prices.

The capitalist economists of the present day, who usually identify inflation with increase in commodity prices, substitute the problem of price rise for the problem of the causes of inflation. Proceeding from the vulgar theory of supply and demand or the no less vulgar theory of costs of production, capitalist economists reduce the causes of inflation either to an excess of demand over supply, or to an increase in costs of production. Many of them hold that two types of inflation exist (depending upon the causes giving rise to them). Thus, for example, the American economist Hart declares, "Inflation due to excess demand is a result of the lack of correspondence between demand and the value (in uninflated prices) of the supply on hand. There is an inflation due to rising costs, which is caused by the inflationary pressure (upon commodity prices — EB) of

wages and the prices of raw materials." (14) The British economists Brechling and Dow also identify inflation which is cost-induced and inflation which is demand-induced as two separate phenomena.

Along with the bourgeois economists, reformists also see the causes of inflation either in excess demand for commodities or in an increase in costs of production. Thus, Crossland employs the concept of "demand-inflation" and "cost-inflation," by which he means in the former case an increase in prices due to excess demand for commodities, and in the latter an increase in prices due to an increase in the costs of production.

The bourgeois apologists of today are attempting to transfer the blame for the most serious illnesses of the capitalist economy to the working class! Thus, among the bourgeois economists there is a widespread "theory" which explains unemployment by the high level of wages. The contemporary capitalist economists are attempting to transfer the blame for inflation to the working class, in similar fashion. This is done in two ways. Economists who see excess demand as the cause of inflation blame consumer demand upon the working people mainly or exclusively. The same economists who explain inflation by increase in the costs of production give major importance, among all costs of production, to wages, and propagate the theory of "the inflationary spiral of wages and prices."

Seeing the cause of inflation in "excess demand," the capitalist economists declare that the decisive factor in the development of inflation is the increase in demand on the part of the workers and other elements of the working class, and not on the part of the capitalists. They document this by the fact that when profits rise, capitalists are allegedly inclined chiefly to increase their "savings" rather than their expenditures upon the purchase of commodities, while when working people experience an increase in income, they increase their demand for consumer goods. As we find in the English journal, Banker, (July 1946), "In modern times, the cause of inflation has come to be regarded not as the quantity of newly created money and income, but as that quantity of money and income which goes to the purchase of commodities, and particularly of consumer goods."

The same bourgeois economists who explain inflation by increase in costs of production single out wages among the latter and assert that workers who have achieved an increase in wages with the aid of trade unions and strike action thus bear the responsibility for increase in commodity prices. In turn, the rise in prices again incites the workers to seek an increase in wages. Thus, we get what looks like an "inflationary spiral": rise in wages — rise in prices — new rise in wages — new rise in prices, etc.

Among the partisans of the theory of the "inflationary spiral of wages and prices" is the well-known American economist Chandler, who, in his monograph on inflation in the United States from 1940-1948, which appeared in 1951, writes: "The doubling of the monetary pay scale was an important factor in the inflation... The inflation would have been less if wage rates had not risen so rapidly." The English economist Dow, who claims to have made an exhaustive analysis of the causes of inflation in England after World War II, declares: "The phases of price increase... were virtually parallel to the motion of costs ascribable to wages... This is not surprising inasmuch as costs for labor represent more than one half of price." (15) Many other capitalist economists, including the German economist Giersch, also speak of the "inflationary spiral of wages and prices."

The theory of the "inflationary spiral of wages and prices" is propagandized not only in the articles and

monographs of bourgeois economists, but in the official documents of the governments of capitalist countries and even in the documents of the United Nations. For example, this theory is given much attention in the World Economic Review for 1957, published by the United Nations.

The theory of the "inflationary spiral of wages and prices" has gained considerable popularity among right-wing socialists, and many well-known ideologists of reformism and revisionism, particularly the British Laborites, are eager propagandists thereof. When the Labor government came into power in England after World War II, it undertook a policy of "freezing" of wages, under the excuse of "struggle against inflation." In order to find a foundation for this policy, the Laborites turned to the theory of the "inflationary spiral of wages and prices." Thus, C. Mayhew has made every effort to demonstrate the undesirability of struggle to increase wages by workers, supporting his position by the allegation that an increase in wages inevitably results in increase in prices and therefore gives the workers nothing. He wrote, "A higher wage immediately gives rise to higher prices and higher profits, so that whereas a portion of the workers may gain, the share of the working class in national income remains where it was before." (16) In 1949, the leader of the British Labor Party, Attlee, said at the Fabian Congress, "The increasing demand for a raise in monetary payment in any form leads directly to inflation with all its consequences, if there is not an adequacy of commodities." In an official collection of articles published by the Labor Party in 1951, the workers' demands for wage increases were directly called "irresponsible," and it was asserted that if these demands were satisfied, the "results would be higher prices and inflation."

The theory of the "inflationary spiral of wages and prices" is being propagandized by the reformists today as well. Thus, the Laborite Crossland, in his book cited above, asserts that "excessive demand on the labor market may also have a negative effect upon prices, giving rise to a spiral of wages and prices." The German reformists Hankel and Zweig declare that during the phase of boom, the struggle of the workers for higher wages is useless, as "if the trade unions strove to achieve equality between the movement of wages and the movement of productivity by means of a policy of higher wage rates..., it would be necessary to face a further (and strong) price rise," and "the inflationary movement would be accelerated." (17)

The attempt to shift the burden for inflation onto the working class is fundamentally wrong in theory, while in practice it is directed against the interests of the proletariat and in support of those of the capitalist monopolies.

The explanation given to the effect that inflation is due to a rise in the consumer demand of the working people is erroneous in many respects. In the first place, as already indicated above, it is wrong to identify inflation with price increase and to substitute the question of the causes of price increases for that of the reasons for inflation. In the second place, it is a distortion of reality to explain inflationary increases in prices by growth in the consumer demand of the working people. The bloated inflationary demand is not from the working people, but primarily from the capitalist monopolies and the bourgeois government, whereas the latter, utilizing inflationary emission of paper money, conceals its military expenditures and sets into motion a rising demand for arms, equipment and food-stuffs for the armies, etc. In the third place, in presenting the consumer demand of the working people as the cause of inflation, the capitalist politicians and economists attempt to mask military demand, which plays a very definite

role in the inflationary process. Moreover, they attempt to provide a theoretical foundation for the policy of cutting the incomes of the working people by increasing taxes, "freezing" wages, etc.

No less erroneous is the explanation for inflation by increase in costs of production due to rise in wages.

Distinct from the prices for means of production which, in expressing the cost of the means of production, bring a definite degree of influence to bear upon the prices of commodities, the price of a specific commodity — labor power — that is, wages, does not at all determine commodity prices. Wages, as we know, are a portion of the new value ($v + m$), created by the workers' labor, and changes in the wage level (v), all other conditions being equal, lead to inverse changes in surplus value (m), and not to changes in the value and prices of commodities. Some bourgeois economists have been compelled to recognize that an increase in wages does not necessarily result in an increase in prices, to the degree that it is compensated for by a reduction in profit or to the degree that a growth of labor productivity proceeds side by side with the increase in wages.

However, the bourgeois reformist theory of the "inflationary spiral" stands the causal relationship of phenomena on its head, in ascribing the growth in commodity prices to the rise in wages. During an inflationary period, there is first a rise in commodity prices, and only thereafter do the workers undertake a struggle to increase wages. "The rise in prices," declares Dow in his book cited above, "affects wages only after a given period of time has elapsed, and this time period may be taken as approximately six months." Thus, the very increase of wages itself is conditioned by the inflationary increase in prices (or to be exact, it is the struggle of the workers as a result of this increase that is so conditioned), but it does not give rise to an increase in prices, as is asserted by the capitalist economists.

In practice, the theory of the "inflationary spiral" is directed toward defense of a policy of "freezing" of wages, and against the struggle of the working class to raise wages. The American economist Harris writes, "The inflationary spiral of wages and prices becomes the more threatening as the trade union movement becomes more powerful." (18) From this the conclusion follows that in order to overcome inflation it is necessary to weaken the trade unions and "freeze" wages. This conclusion is also borne by partisans of the theory of the "inflationary spiral of wages and prices." For example, Dow, in the same book referred to, declares, "If there is already an evident spiral of costs and prices, counteracting factors are in order. The most important of these is a freezing of wages or a limitation and control of prices."

The anti-working class direction of the theory of the "inflationary spiral" is most clear in the expression of the Swiss economist W. Roepke. He complains about the "undisciplined policy of wages," carried out by the trade unions and, in his words, giving rise to inflation. Roepke asserts that "the power of the trade unions is always directed in such fashion that any attempt to correct the factors acting toward inflation in the form of wage increase by reducing wages runs into a virtually unsurmountable obstacle of a social and political character." (19) In fact, what he advocates under the cloak of "correction" of factors acting toward inflation is a cut in wages and an attack upon the living standard of the working class.

One cannot but note that this type of conclusion from the theory of "the inflationary spiral of wages and prices" serving as a "scientific" foundation for an attack on the

living standard of the proletariat, is also made by right-wing socialists. Specifically, Attlee, when Prime Minister of England, spoke out against the raising of wages and "freezing thereof." He stated, "There is a rising danger of inflation and a greater need than ever before for a limitation of personal incomes." (20) The dissemination of the theory of the "inflationary spiral of wages and prices" is one of the vivid examples of how the right-wing socialists propagandize purely capitalist theories directed against the interests of the working class.

The policy of the "freezing" of wages was actually carried out by the Labor government in practice, so that the increase in wage scales during the period when the Labor government was in power was artificially inhibited and fell notably behind the rise in commodity prices. Thus, for the period 1948-1951, retail prices rose 16% on the average, and food prices even rose 24%, while wages rose only 13.2%. As a result, the real wage per unit of product dropped 13% during this period. It is clear that the Labor policy of "freezing" wages, the direct foundation of which was the theory of the "inflationary spiral of wages and prices" did serious harm to the British workers. At the same time, the profits of capitalist firms rose 44% from 1948 to 1951.

As we know, the reformists love to set themselves up as protectors of the interests of the workers. They even criticize Marx for the fact that he allegedly underestimated the struggle of the working class for increase of wages, and declare that this struggle is of primary significance. However, as the British proverb goes, "the proof of the pudding is in the eating." When the matter comes down to a real struggle against a reduction in real wages caused by inflation, the right-wing socialists begin hypocritically to propagandize among the workers the idea that this struggle is useless and senseless because of the notorious "inflationary spiral of wages and prices."

How can one fail to see the connection with the famous episode in the *Pickwick Club*. When a member of this club, Mr. Bloaten, referred to the honorable Mr. Pickwick as a braggart, causing general excitement, the chairman asked, "Are we to understand this expression in its generally accepted sense?" And after Mr. Bloaten explained that he used the term "braggart" not at all in the generally accepted sense, but only in the *Pickwickian* sense, Mr. Pickwick deemed himself completely satisfied by this explanation. Only in the "pickwickian" sense can the right socialists and reformists call themselves defenders of the interests of the working class, whereas in the general sense they emerge as protectors of the interests of capital, particularly when they provide a pseudo-scientific foundation for the "freezing" of wages on the basis of the theory of the "inflationary spiral."

Exposing the harmful nature of the theory of the "inflationary spiral" to the interests of the working class, John Eaton correctly observes, "Freed from its cloud of words, the capitalist theoretical argument about inflation comes down to the following: that what the capitalist did not squeeze out of the worker one way he'll get out of him in another way, and therefore one should not interfere with the capitalist. A theory that results in this conclusion is not merely erroneous; it is outright defeatism and a negation of the need for the very existence of a working class movement." (21)

The slogan with respect to "freezing" of wages, which is a direct conclusion from the theory of the "inflationary spiral of wages and prices," encountered resistance on the part of the working class, as this "freezing" results not at all in elimination of inflation, but merely in impairment of the position of the workers and increase in the profits of

the capitalists. In connection with the fact that the theory of "inflationary spiral of wages and prices" is being increasingly discredited among the working class, the reformists have been compelled to retreat and maneuver. While some of them continue to defend the theory, others qualify it in various ways (22), and some even reject it. (23) The enforced recognition of the lack of foundation of the theory of the "inflationary spiral of wages and prices" bears witness to the fact that the efforts of bourgeois economists to provide an explanation for inflation are failing.

The Problem of the Social and Economic Consequences of Inflation

The bourgeois and reformist theories of inflation have a class essence. The exploiting classes utilize inflation as one of the major means of attacking the vital interests of the masses of the working people and as a tool for enriching themselves. The monopolist bourgeoisie increases its profits at the cost of a considerable reduction in the real wages of the workers and other sections of the working people, and specifically by reducing the real incomes of the small commodity producers — peasants and craftsmen.

The apologetic nature of contemporary capitalist and reformist theories of inflation is manifested most clearly in what their authors have to say about the consequences of inflation. The defenders of capitalism underrate and even completely deny the disastrous influence of inflation upon the position of the working class. For example, the German economist Forstmann, noting the unfavorable influence of inflation upon the position of government workers, pensioners and coupon clippers, keeps silent about its negative effect upon the working class. He says, "The workers and office workers of business enterprises belong to those categories of non-entrepreneurs, whose income, although it is fixed, nevertheless is of such nature that there is the possibility of some degree of adaptation of the nominal income to increased prices due to inflation." Forstmann attempts to found this assertion by a reference to the effect that the workers are "participants in production" and make their contribution to economic successes of the enterprises, and therefore "prerequisites and possibilities do exist for their participation in these successes, the motivations being not only of a business, but also of a social and ethical character." (24) The American economist Chandler, who advances a thesis to the effect that inflation has a favorable influence upon the position of the working class, goes further along the path of bourgeois apologetics. In his words, inflation during and subsequent to the Second World War led to an increase in employment, an increase in real wages, and an increase in the share of the working class in the national income of the USA. Chandler asserts that during the inflationary period, "a certain tendency to a more equal distribution of income, accompanied by an increase in the portion of income obtained by the lower groupings, is observed." (25) These assertions are a crying distortion of the facts. In reality, inflation does not improve but, on the contrary, impairs the position of the working class and all strata of the working people. It is not uninteresting to note that at one time this was recognized by Chandler himself. Thus, for example, in an article by Rogers and Chandler on inflation published at the beginning of the thirties in the *Encyclopaedia of the Social Sciences*, it is stated, "the victims of inflation are those whose monetary income do not rise as rapidly as do prices: creditors, workers getting wages and salaries, see that their real incomes drop as the monetary unit loses its purchasing capacity."

How is one to explain that Chandler, who in the 1930's

still held to a correct position on the matter of the consequences of inflation, abandoned his view in the 50's and took the opposite position? This is explained by the exacerbation of the contradictions characteristic of capitalism, the stronger struggle of the working class, which inevitably deepens the apologetic character of bourgeois political economy.

The facts of capitalist reality negate Chandler's present conception. True, during the Second World War, in conjunction with the rise in production for military purposes, real wages in the USA increased somewhat, but this is to be explained not by inflation but by the reduction in unemployment, the lengthening of the working day, and the introduction of overtime. It is also necessary to bear in mind that, during the war years, inflation did not fully express itself in affecting prices, and that an inflationary increase in prices of the USA became acutely manifest only in 1946, when price controls were dropped. It was precisely then that the lag in nominal wages behind the rise in prices became clearly evident. In the period from 1944 to 1947, the net average weekly wage of workers without dependents dropped from \$50.92 to \$44.77 (in prices of 1947-1949), while that of workers with three dependents dropped from \$58-\$59 to \$50-\$51. (26) Consequently, as inflation in the United States became more acute, real wages dropped 12-14%. This completely negates Chandler's assertion that inflation has a favorable influence upon the position of the worker.

Following in the footsteps of the capitalist economists, the reformists also tend to smooth over the social consequences of inflation. For example, Strachey sees as the total consequence of inflation, a drop in the share of the coupon clippers in the national income, and an increase in the share both of the capitalists and the workers at their expense. He writes, "The drop in the share of fixed incomes is, of course, a consequence of the increase in the price level, a consequence of inflation. But inflation... redistributes what it takes from the coupon clippers and gives it, in equal measure or to an even greater degree, to profits and to the working class." (27)

Thus, the workers and the capitalists together gain from inflation at the expense of the poor unfortunate coupon clippers! Inflation, which is one of the most harmful burdens on the working class, is cynically pronounced a factor in increasing the share of the working class in the national income, and consequently in improving its position.

The apologetic nature of the treatment of inflation by bourgeois economists is also manifested in the examination of the question of its influence upon the national economy. During the period of the general crisis of capitalism, when inflation became virtually chronic, many capitalist economists attempted to make a virtual necessity and proclaimed inflation to be one of the major means of assuring "permanent prosperity" to capitalism.

In the opinion of the leader of the most influential school of modern capitalist political economy, J. M. Keynes, unemployment and crises are "diseases" of capitalism which it may cure by using the "therapy" of monetary credit. Keynes believes one of the major causes of unemployment to be the limited amount of money, which in his opinion, gives rise to the high level of loan interest and this, in turn allegedly limits the volume of investments, and thereby the level of employment. He draws the conclusion that the road to assuring "permanent prosperity" to capitalism and "full employment" consists of increasing the amount of money and reducing the rate of interest. Keynes declares that the only way out may be to increase the quantity of money. (28)

In voting, when one boils things down to their essence,

for an inflationary monetary policy, Keynes and the Keynesians mask this by talk to the effect that an increase in the amount of money in circulation has a stimulating influence upon production and employment. According to Keynes, until "full employment," that is, elimination of unemployment, is attained, an increase in the mass of paper money results in only a small increase in commodity prices, while its chief consequences are an increase in production and employment. This, in Keynes' terminology, is not yet real inflation, but only "semi-inflation." And only when production has increased to the point at which all formerly unoccupied resources of labor and materials are utilized does further increase in the mass of money call forth an "absolute" or "genuine" inflation.

Keynes' ideas are propagated by many capitalist economists of many countries. Thus, B. Hansen, in the book cited above, declares that "unemployment is impossible" under inflation, but that "at least full employment must exist," and "over full employment" is even probable. In turn, the German economist Mann, resident in the United States, writes, "A moderate, general price increase, distributed over long periods of time... improves the economic planet to an incomparably greater degree than even a mild deflationary movement." (29) Another German economist, E. Schneider, asserts that so long as "incomplete employment" exists in the economy, that is, so long as there are unutilized means of production and labor power, an increase in the monetary demand cannot be inflationary in character, but leads to involving unutilized reserves of productive forces in production. "The inflationary spread," between demand and supply begins, in his words, only after the attainment of "full employment." (30)

The Keynesian views are also propagandized by right-wing socialists. Thus, the distinguished Labor theorist Cole, proceeding from the Keynesian theory that "an influx of an additional amount of money will, in the majority of cases, stimulate employment," comes to the following conclusion: "If we find that resources are not completely utilized, this provides reason to increase means of payment." (31)

Crossland follows Keynes in recognizing the "beneficial nature" of "moderate inflation" as a means of assuring "complete employment," although he makes the qualification that large-scale inflation is not desirable. Crossland writes, "Under normal conditions of peace, progress and efficiency demand, among other things, that periodic crises of substantial excess demand be prevented (although it is possible that a constant moderate inflation is inseparable from total employment)." Thus, even with respect to the economic consequences of inflation, the reformists propagandize typical bourgeois-apologetic views.

Our article does not pose the question of criticizing the theory of Keynes and of the Keynesians as a whole. We draw attention merely to certain of their major errors, which are directly related to the theory of inflation.

In the first place, Keynes' hypothesis to the effect that incomplete utilization of resources of materials and labor under capitalism, which are manifested most clearly in unemployment and crises, are a result of an inadequate amount of money, is fundamentally false. The cause for these phenomena lies not at all in the alleged shortage of money, but in the contradiction between the social character of production and the private capitalist form of appropriation which is characteristic of capitalism.

In the second place, his opinion that an increase in the amount of paper money can be used to cure the ulcers of capitalism is equally false. The assertion made by Keynes and the Keynesians to the effect that inflation is

"incompatible" with unemployment and to the effect that true inflation begins only when "full employment" has been attained, is denied by the facts of capitalist reality. It is generally recognized that not only during the years of the Second World War, but during the post-war years, the circulation of money in the capitalist countries proceeded under the banner of inflation; yet unemployment was not at all eliminated. According to the understated official data, the number of totally unemployed fluctuated between 6.9-9.2 million in only eleven countries of the capitalist world in the years 1950-1957. (32) As to the "crisisless" development of capitalism with the aid of inflation, the possibility of this is denied by the fact that there have been three crisis-type depressions in production in the USA since World War II — 1948-1949, 1953-1954, and 1957-1958.

In the third place, the Keynesian apology for inflation, which appears under the mask of allegations with respect to the "beneficial" influence of the increase of the amount of money in circulation upon production and employment, is a theoretical foundation for an attack by monopoly capital upon the living standard of the working class. The criticism of modern bourgeois economy is manifested in the fact that it dresses up the plunder of the masses of the people by capitalist monopolies and the capitalist governments with words about the interests of the national economy ("permanent prosperity") and of the working class ("full employment").

It would be incorrect to assert that all bourgeois economists favor an inflationary fiscal policy. As we know, inflation is a stick with two ends as far as the bourgeoisie is concerned. On the one hand, it assists the capitalists to acquire enormous inflationary super-profits. On the other hand, it results in disorders in the capitalist economy and in an increase in the dissatisfaction of the working people, which threatens the existence of capitalism. Therefore, even the defenders of inflationary policy usually speak forth only for "moderate inflation," and when inflation becomes stronger and more acute, a number of bourgeois ideologists call for an end thereto.

The opponents of inflation express rather healthy ideas with respect to the ephemeral nature and the illusoriness of its "stimulating" effect upon production, which is so praised by the Keynesians. For example, the Austrian economist W. Taucher writes, "Everybody knows that inflation first demonstrates a stimulating effect; but this is not the bloom of health but the bloom of fever, which in addition to the other (inflation — EB) spreads more widely through the economy and in the long run pushes it toward the abyss." (33) However, in bourgeois political economy, both inflationary and anti-inflationary conceptions are directed against the working class.

The point is that those bourgeois economists who speak out against inflation place the responsibility for it completely or to a considerable degree upon the working class, referring to the notorious "inflationary spiral of wages and prices," and they proclaim the merits, as anti-inflationary measures, of a policy directed toward impairing the position of the working class.

The Swedish economist V. Roepke, in an article titled, "The Value of Money Must be Sacred," calls the problem of inflation "the greatest and, it may be, the most decisive for the fate of our culture." However, he asserts that it is chiefly the trade unions and "excessive employment" that are responsible for inflation, and he believes that wages must be cut and an increase in unemployment must be permitted so as to overcome inflation. He asserts that "a stable value for money and full employment and further

increase in wages are incompatible." An influential organization of English capitalists — the Federation of British Industries — has spoken out in the same direction, in a pamphlet it recently published called "The Struggle Against Inflation." The magazine, *Tribune*, April 1958, reveals the class essence of the "anti-inflationary" policy recommended by the Federation, as follows: "An increase in unemployment, reduction of taxes for the rich, a reduction in social services — here is an example of naked class war obvious to everyone."

Thus, when the bourgeois economists praise an inflationary policy, they are advocating an attack on the living standard of the working people under the mask of assuring an economic boom and full employment, but when they speak out for an anti-inflationary policy, they are also voting for a reduction in the living standard of the working people, under the slogan of struggle against inflation. In both cases, the apologists of the capitalist class appear as defenders of the interests of monopoly capitalism.

In summarizing the foregoing, the following brief conclusions may be drawn:

(1) Capitalist economists distort the essence of inflation in identifying it with price increase or with excessive demand or, finally, with an excessive increase in any economic phenomenon whatever. In expanding the framework of the concept of "inflation" in all possible ways, they render this economic category meaningless and deprive it of class content.

(2) In explaining the causes of inflation, bourgeois economists shift the guilt for inflation from the capitalist monopolies and the bourgeois state to the masses of the working people.

(3) In speaking about the consequences of inflation, the capitalist economists gloss over or even deny the catastrophic influence of inflation upon the position of the working class and its destructive consequences for the national economy. Many of them speak out with apologies for inflation as a method that allegedly makes it possible to attain a crisisless development of capitalism and assure complete employment for the workers.

(4) The reformists and revisionists repeat and propagandize bourgeois-apologetic views on the essence of inflation, its causes and consequences.

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P. Bunich:

The Depreciation of Basic Plant and the Financing of Its Repair and Modernization

The seven-year plan envisages a new large-scale development of the productive forces of our country. The chief condition for its successful completion is the growth of labor productivity through technical progress, a better utilization of basic plant, and improvement in the skills and qualifications of workers and in production organization.

One of the most important problems in extensive all-round mechanization and automatization will be the organization of high-quality and timely repairs; which to a considerable degree determine the normal flow of the production process. Hence questions relating to further improvement in the organization, planning and financing of repair operations assume great national economic importance. The repair problem is intimately bound up with the modernization of production equipment, the reduction of production costs, changes to and utilization of depreciations, the basic plant balance sheet, and the strengthening of cost management. Today its significance has grown especially, because outlays for repair have assumed enormous proportions and are increasing yearly. At the present time, total outlays for capital and current repairs comprise over 35% of all capital investments and expenditures for repair. The 1959 plan assigns about 60 billion rubles for capital repairs to the basic plant of the USSR national economy, of which 27.4 billion rubles are for industry and construction. Outlays for current repairs to basic plant are even greater. In 1956, throughout USSR industry, they exceeded outlays for capital repairs to basic plant by roughly 26%. If this ratio has not changed, outlays for current repairs during 1959 will amount roughly to 75 billion rubles, which, together with outlays for capital repairs, will amount to not less than 135 billion rubles.

Many depreciation computations are due to outlays for capital repairs. 47.2 billion rubles should be assigned from depreciation figures (approximately 59%) for capital repairs throughout the national economy as a whole, of which 27.2 billion rubles (about 54%) (1) should go for industry and construction.

A system of financing and banking control of the disbursement of funds for repair purposes is very important to insure the availability of the necessary money for this purpose, to see to its economical disbursement and to the reduction of the cost of repair work.

At the present time capital repairs are being financed from depreciation and current repairs from circulating funds. Marx wrote that basic plant consists partially of elements with varying spans of useful life. They are renewed over varying intervals of time; rails, for example, in the vicinity of railway stations have to be replaced more frequently than those that are laid over other, outlying stretches of track. This is also characteristic for the functioning of different parts of the same machine. This

determines the necessity for the periodic replacement or reconditioning of structural elements in an instrument of labor prior to the complete wearing out of the instrument as a whole. Such replacement (or reconditioning), occasioned by the socially necessary and proper wearing out of relatively rapidly depreciating elements of instruments of labor, is performed and charged to the value transferred by them to their products, or to depreciation accounts, and is called capital repair.

It should be noted that, in most cases, outlays for capital repairs exceed the value of the replaced parts or the cost of reconditioning them. This is due to the weak mechanization and specialization of repair operations, to the small size of production batches and to the inadequate centralization of drafting and designing management. Apart from this, repairs require certain outlays that are not included in the value of the replaced or reconditioned parts, as, for example, in outlays for the compilation of defective lists and for the dismantling and shipping of machines. Repair times are made to coincide with production breaks, leaves and days off. During the course of the repair job, parts that have suffered relatively little wear are often replaced along with those that are heavily worn. Thus machines do not have to be dismantled so frequently and their useful life is extended.

Marx distinguished repair work proper, or mending jobs, from capital repairs or replacement. He wrote that the replacement and preservation of basic plant, partial renovation and repair work proper constitute separate categories. Marx brought the fixing of accidental breakages, of accidental damage, under the heading of current repairs. (2) While capital repairs arise from the normal, legitimate wear of instruments of labor, and hence are financed from depreciation accounts, current repairs, which are necessitated by accidental breakages, may not or, in any case, should not always be financed from the value transferred by the instrument of labor to its product. Even though the value of the instrument of labor has not yet been carried over into its product, it still has to be repaired. Such repair work requires additional labor inputs, either only partly or not at all included in the value of the basic plant. It is performed at the cost of accessory labor inputs which are included in the price of the product. This additional cost, generated by additional labor inputs, cannot go into the price of the commodity at the same time that the additional labor is being performed. The mean quantity decides here, as in every case of value determination. The average number of breakages and damages and the amount of the average repair bill are determined from past experience for the average life span of a given instrument of labor operating in a given branch of production; the average expenditure is distributed over the average life span of the given instrument of labor and is added in corresponding amounts to the price of the product.

These theoretical positions of Marx lay bare the nature of the various forms of repair work and provide an economic criterion for their demarcation. However, individual economists are attempting to prove that Marx's statements on replacement and mending work do not relate to the determination of the nature of repair production, but to a description of a method worked out in practice for

calculating repair costs. Such assertions are erroneous, in our view, because they do not take account of the economic difference between replacement and mending work.

As has been noted, part of the value of basic plant is consumed during the course of its operation. In capital repair work, worn out components are either replaced by new ones or renovated. Hence the value of basic plant is higher after capital repair work than just before it, i.e., capital repairs increase its residual value. This does not mean, of course, that the costlier the capital repair, the higher the residual value of the plant unit. Capital repair increases the residual value of the unit by a quantity equal to standardized, not to the actual, repair costs. Yet there are economists who hold that outlays for capital repairs are not at all related to the residual value of the unit of basic plant. They maintain that the inclusion of capital repair amortizations in the cost price of the final product, with the consequent rise in the residual value of basic plant by the amount of the value of the capital repair, constitutes a duplicated calculation. The error of these economists lies in that they take the practical process of the circulation of basic plant values for a duplicated calculation. The actual flow of basic plant value goes through several phases: first the basic plant costs are incurred; then the given plant unit confers its value on the product in parts as amortizations to its renovation and capital repair, during which time its residual value declines; then transfers are made from the amortization fund to old basic plant in the form of capital repairs performed on it (thus increasing the residual value of the plant units so repaired) and to the new plant through the production of new units to replace

worn out ones (thus increasing the residual value of basic plant on the national scale). This consecutive shift of forms of basic plant values contains, as we can see, no duplicate calculation.

The system currently in force for financing repair operations violates the principles of planned, preventive basic plant maintenance. Planned, preventive maintenance is generated by normal, legitimate wear and tear in the instruments of labor and is economically equivalent to partial replacement. In consequence of this, it must be financed chiefly from depreciation amortization reserves, and not from working capital as is currently the case. It should be particularly noted that so-called "average repairs," effected once every 3-5 years, are, from an economic standpoint, capital — not current — repairs. Thus, according to data from the TSNII (All-Union Central Scientific Research Institute) of the Ministry of Roads and Communications of the USSR, freight cars (excluding refrigerator and acid tank cars) undergo capital repairs every ten years, and average repairs every five years. A similar situation exists in other types of basic industrial and transportation plants.

Certain economists propose that all basic plant repair costs be financed through the product cost price. The implementation of this proposal would lead to sharply intensified fluctuations in the cost-price level of manufactured products, which is borne out by the following figures on actual monthly outlays for capital repairs to basic plant at certain enterprises during 1957 (in percentages):

	Jan- uary	Feb- ruary	March	April	May	June	July	Aug- ust	Sep- tem- ber	Octo- ber	No- vem- ber	De- cem- ber	Total for year
Sarkan Zvaigzne bicycle factory	—	5.2	9.1	4.7	8.0	10.0	2.3	6.7	10.2	8.8	20.3	14.7	100
Plakantsiyems peatery	3.7	11.7	7.9	0.2	3.9	2.0	2.4	7.7	21.3	12.8	21.1	5.3	100
Varonis rubber products factory	—	7.5	0.1	10.4	8.9	12.0	10.6	7.9	26.3	8.4	4.6	3.3	100
Riga furniture combinat No. 1	6.6	4.2	2.4	7.2	8.4	3.6	5.4	10.2	22.1	23.9	6.0	—	100
Riga pharmaceutical prod- ucts plant	12.3	9.6	13.7	8.9	12.5	22.0	7.1	0.3	3.7	2.4	1.8	5.7	100
VEF factory	1.6	3.2	9.3	2.7	9.8	8.1	1.9	11.6	8.5	22.7	5.2	15.4	100
Riga liquor and vodka distillery	—	—	7.6	—	—	1.6	30.2	—	7.5	6.5	20.4	26.2	100
Textiliana textile plant	4.2	2.1	9.2	5.4	12.4	21.0	18.4	10.3	7.9	8.3	0.4	0.4	100
Stankolit plant [for ma- chine-tool castings — transl.]	8.7	7.4	3.8	6.0	10.5	5.5	14.1	4.5	6.8	5.7	5.5	21.5	100

The figures in this table show that the actual monthly outlays for capital repairs are distributed very unevenly over the year. Although the average monthly outlays for capital repairs to basic plant are equal to 8.3% of the yearly total, they are altogether lacking for some months, and in others they exceed 20-25% of the total outlays for the year. A study of the monthly outlays for capital repairs shows that they sharply diverge from the monthly mean computed for the whole year. This is reflected in the large average coefficient of monthly capital repair outlays which, as can be seen from the above figures, goes as high as 67.5%.

Monthly outlays for current repairs are also marked by

considerable unevenness. Corresponding figures are presented on the following page on actual outlays for current basic plant repairs during 1957 (in percentages).

It can be seen from these figures that, in some months, figures for current repairs at these enterprises are either lacking or constitute a quite negligible portion of their total outlays for the year. Thus, at the Riga liquor and vodka distillery in November and at the Minsk auto repair shop in September, 1957, no current repairs were carried out, and at the Plakantsiyems peatery, the November repair outlays comprised 1.9%, while in other months these outlays went as high as from 15% to 23% of the over-all yearly volume. For example, current repair expenditures at the

	January	February	March	April	May	June	July	August	September	October	November	December	Total for year
Plakantsiyems peatery	10.1	9.8	10.7	12.8	9.9	9.1	7.2	3.4	10.1	7.6	1.9	7.4	100
Varonis rubber products factory	7.4	7.7	8.2	6.1	6.3	4.7	17.0	8.3	7.2	11.1	6.0	10.0	100
Yugla paper mill	4.0	5.4	4.9	5.1	8.5	8.2	6.1	6.1	10.7	23.0	7.8	10.2	100
Riga liquor and vodka distillery	7.8	9.5	2.3	6.8	8.4	12.3	10.5	20.9	14.2	7.0	—	0.3	100
Textiliana textile mill	5.6	10.1	9.3	6.4	6.1	5.9	9.4	10.1	5.4	8.2	6.2	16.7	100
Minsk auto repair shop	11.7	1.7	3.4	4.2	5.8	4.2	7.2	5.8	—	3.4	0.9	51.7	100

Yugla paper mill during October, 1957, were 23% of that enterprise's over-all volume for the year, at the Riga liquor and vodka distillery they were 20.9% during August of the same year, at the Varonis rubber products factory they were 17% in July and at the Textiliana textile mill — 16.7% in December. The table also shows that, although the yearly outlays for current repairs are distributed more evenly from month to month than capital repair expenditures, yet they still fluctuate substantially. The mean

coefficient of fluctuation of monthly current repair expenditures for 1957 was 25.3% at the Varonis plant, 22.9% at the Riga electrical machinery plant, 30.1% at the Plakantsiyems peatery and 28.9% at the Textiliana mill.

The unevenness of monthly expenditures for capital and current repairs is not eliminated by combining them. The following table contains data on the actual monthly outlays for capital and current repairs during 1957 (in percentages):

	January	February	March	April	May	June	July	August	September	October	November	December	Total for year
Plakantsiyems peatery	7.0	10.7	9.4	6.8	7.0	5.7	5.0	5.4	15.4	10.2	11.0	6.4	100
Varonis rubber products plant	2.5	7.6	2.9	9.0	8.0	9.5	12.6	8.1	19.8	9.3	5.1	5.6	100
Riga furniture combinat No. 1	5.5	5.5	5.8	9.1	9.8	7.6	7.8	8.3	13.4	14.9	7.3	5.0	100
Riga liquor and vodka distillery	5.2	6.2	4.1	4.5	5.6	8.7	17.1	14.0	12.0	7.0	6.7	8.9	100
Textiliana textile mill	5.1	7.7	9.7	6.1	8.0	10.3	12.3	10.2	6.2	8.2	4.7	11.5	100
Astotais Marts textile mill	4.6	3.5	16.6	11.5	6.5	20.7	9.9	1.8	3.2	3.0	1.6	17.1	100
Minsk auto repair shop	4.5	3.4	6.4	5.4	4.5	7.4	7.9	2.9	10.6	14.9	11.1	21.0	100
Stankolit	7.8	7.1	5.5	7.6	10.7	6.4	11.5	6.4	7.0	6.9	7.2	15.9	100

It can be seen from this table that extremely negligible amounts were disbursed in some months for capital and current repairs to basic plant. Thus, at the Varonis rubber products factory, January repair costs were 2.5% of the yearly volume and at the Minsk auto repair plant — 2.9% in August. At the same time, repair outlays during other months were as high as 12-21% of the yearly volume. At the Minsk auto repair plant, for example, the amount recorded for repairs in December was 21% of that enterprise's repair bill for the year, the September figure at the Varonis rubber products factory was 19.8%, the July figure at the Riga liquor and vodka distillery was 17.1% and the December figure at the Stankolit foundry was 15.9%. The mean coefficient of fluctuation in disbursements for repair work during 1957 as a whole was 47% at the Varonis plant, 68.7% at the Astotais Marts mill, 37.4% at the Riga distillery and 27.7% at the Riga furniture combinat No. 1.

Fluctuations in repair outlays may be ignored in branches of production where such outlays comprise only a small percentage of the final product cost. Thus, they do not exceed 1% in the textile industry and hence cannot have any perceptible effect on the general prime cost level. There are many branches and enterprises, however, at which repair outlays are considerable. The following figures exemplify the variable extent to which repair outlays may affect the final product cost. (See table on the following page.)

These examples graphically show the fluctuations that may occur in the general production cost and profit level at different periods of the year when all repair work is financed through production costs. This is why the proposal to finance repairs from working capital is, in our view, unacceptable. What is needed is not to increase allocations from working capital for repair financing, but, contrariwise, to decrease them through a corresponding increase in the amount financed from depreciation accounts. It will thus be possible to even out, not only capital repair outlays, but a considerable part of the expenditures for current repairs as well, which are economically indistinguishable from capital repair outlays.

To finance all repair jobs from working capital, it would be necessary sharply to extend the scope of reserve accounts for repair expenditures. This would increase the volume of bookkeeping work at enterprises, whereas the financing of most repair outlays from depreciation accounts would, in essence, entail a much simpler way of allocating reserves for them — with the aid of depreciation standards.

It should be remarked that financing repairs from working capital can lead to an artificial reduction in production costs as a result of non-performance of the necessary volume of repair work. Even today certain enterprises are not performing the volume of current repair work required by their basic plant and are unjustifiably reducing the unit

	% of Yearly Production Costs Attributable to Repair Outlays	Lowest Proportion		Highest Proportion	
		Months	%	Months	%
<u>Construction Materials Industry</u>					
Riga cement factory	11.6	Feb.	3.5	Oct.	31.8
Boldaraisk silicate brickworks	22.9	Jan.	12.3	March	36.2
Boldaraisk structural ceramics works	16.3	Feb.	9.0	March	33.2
<u>Chemical Industry</u>					
Superphosphate work	9.2	Nov.	6.0	Aug.	14.5
<u>Paper and Woodworking Industry</u>					
Sloka pulp and paper mill	7.8	April	5.3	Feb.	13.4
Yugla paper mill	7.1	Aug.	4.7	Oct.	12.3

cost of their finished products. Hence, during the period from 1948 to 1956, throughout the industry of the USSR as a whole and in most of its separate branches, current repair outlays per 1,000 rubles of basic plant have gone down far more than disbursements for capital repairs. The greatest losses from the writing off of basic plant, expressed in percentages of its original value, occur, as a rule, in those branches of industry where, as a result of "economizing" politics, current repair outlays constitute a relatively minor portion of all repair outlays. Thus, according to data supplied by former machine-building ministries, losses from the liquidation of basic plant at heavy machine-building enterprises in 1956 accounted for by far the largest portion — 44.5% — of the original value of discarded instruments of labor. At the same time, current repair outlays at these enterprises were only slightly higher than outlays for capital repairs.

These defects will not be rectified by financing all repair jobs from working capital. On the contrary, economic stimuli will be generated to the artificial reduction of expenditures not only for current, but for capital repairs as well. These defects can only be eliminated, in our view, by increasing the share of depreciation reserves in the over-all volume of repair financing. This will promote adherence to capital and current repair timetables, the performance of needed repair jobs, a more rational exploitation of basic plant and its better utilization. The financing of repair work from working capital would also disrupt bank supervision of disbursements for repairs, since this supervision is exercised through the amortization allocations available on special accounts of enterprises in the State Bank of the USSR, and also to an absence of control in repair financing and, consequently, to an increase in capital and current repair costs. The financing of the greater part of the repair volume from depreciation amortization accounts, on the other hand, would extend the scope of banking control over the economic and purposeful expenditure of funds for repairs and would help to reduce production costs. Considerable improvement is also needed in the existing system of banking control over the disbursement of funds for capital repairs, which is rather formal in character at present. Apart from this, it is expedient that disbursements for all forms of repair work be constantly controlled by economic, planning and financial agencies.

Increasing the proportion of repair jobs financed from reserves for depreciation will contribute to a more correct determination of allocations to depreciation accounts, will ensure a uniform inclusion of repair costs in production

costs, will release enterprises from the necessity of allocating unwarranted reserves for repairs, will extend banking control over their disbursement, will make possible a reduction in production costs and forestall the artificial shunting of funds, depending on their origin, to various kinds of repair work. Only simple mending jobs, arising from accidental breakages, should be charged to current repairs and financed from working capital. In addition to this, the replacement of parts with a service life of less than a year and priced up to a specially set limit should be charged to current expenses. At the same time, in order that the cost of repairs financed from working capital (apart from emergency repairs) may be planned and substantially reduced, special norms must be worked out in percentages of the value of basic plant, with due regard for the peculiarities of the separate branches of industry, the composition of their basic plant, operating schedules and other factors.

One of the most important ways to improve the utilization of basic plant is modernization. The modernization of equipment makes it possible to increase production output and labor productivity at less expense and more rapidly than by constructing new enterprises. About 400 thousand machine tools will be modernized during the next seven years, which will increase their productivity by an average of 25% and will require 2.8 billion rubles.

In the machine-building industry, modernization has secured a sharp reduction in auxiliary time, raised the productivity and eased the labor of the workers. In the metallurgical industry and in blast-furnace production, feeders are being modernized by conversion to higher pressures, batch preparation and transportation are being mechanized, changes are being made in furnace construction to improve their parameters, air-stream blasters are being installed, etc. In open-hearth production, furnaces are being modernized by increasing their capacity and hearth bottom area, cooling systems are being converted to evaporative cooling, ladle and charging machinery capacity is being increased. In rolling production, the rolling mills are being modernized, roll stands are being mechanized, rolling speeds are being stepped up, etc. In light industry, a great deal of work is being done in loom modernization. For example, the installation of automatic winders on filling yarn spinning machines alone at the Ivanovo Melange Combine is yielding yearly savings of 505 thousand rubles.

Modernization work is being financed at present from a variety of sources: enterprise profits, State Bank credits,

innovation and rationalization funds, depreciation allocations for capital repairs. The worst flaw in current modernization financing practice lies in that adequate resources are not continuously available to enterprises for the financing of regular modernization work on their equipment.

Due to their economic nature, funds for modernization purposes should be built up in the same manner as for capital repairs, with the sole difference that the economic depreciation of components, sub-assemblies and assemblies must be taken into account when determining the service life of the machine involved. At the same time, it is not always possible to finance modernization work by the accelerated amortization of replaced components in instruments of labor. Frequently so-called top-to-bottom modernization jobs are done, as a result of which the number of components and assemblies is increased and costlier parts are installed. This modernization exceeds the bounds of depreciation accounts computed on the basis of the value of obsolete, superseded parts and assemblies. Its point of origin is the fund of accumulation, the national income. Hence, the top-to-bottom modernization of enterprises, and also the economically sound modernization of the various types of equipment, not provided for in depreciation standards, should be carried out and charged to other sources, particularly to budgetary allocations and to State Bank credits.

In view of the matured importance of modernization work, and also of the fact that outlays for its performance have become systematized to a considerable degree, it is our view that a standing reserve should be set up at each industrial enterprise for the financing of these outlays. They should be covered, as we see it, chiefly by reserving for depreciation computed with plant modernization in mind. Taking into consideration that modernization and capital repair work at enterprises is as a rule performed simultaneously, we are of the opinion that depreciation reserves for modernization and similar reserves for capital repair should be merged.

When the new depreciation standards are worked out for the financing of capital repairs and modernization work, unexplored ways of reducing their cost will have to be taken into account. Considering that repair work costs several times as much as modernization, the discovery of ways to reduce repair costs should be given priority. Otherwise, the new depreciation standards will be excessively high, which will lead to unnecessary expenses and to high finished product cost prices.

Heavy repair costs are to a considerable extent associated with the dispersed location of many repair enterprises, the inadequacy of their specialization and their low technological standards. The new industrial and construction management has opened up wide possibilities for better utilization of the capacities of existing repair plants, for increasing the output of spare parts and components for modernization by equipment supplying enterprises, for the reconditioning of worn out parts and for the application of advanced methods in the organization of repair and modernization work. A great deal of work has been done by several economic councils towards the specialization of repair production. Many repair plants have been organized at the larger enterprises of the Moscow oblast, Leningrad and Kharkov economic councils and also of the economic council of the Belorussian SSR and others, the manufacture of spare parts has been increased, work is being done to raise the level of mechanization of repair operations and disseminate advanced methods of repair work. The Moscow

economic council has set up a plant specializing in the capital repair of metal-working machine tools. Twenty-five enterprises of the Moscow economic council have organized the centralized manufacture of the most widely used spare parts.

At the same time, however, at several economic councils and in some branches of industry, repair and modernization work has so far been performed by handicraft methods, parts and assemblies being produced individually. In the chemical, petroleum and light industries, for example, repair and modernization jobs are performed, as a rule, on an ad hoc basis, by the efforts and at the cost of the enterprises themselves. Continuous conveyor-belt production methods are not employed here in repair and modernization work and, hence, the costs of having it performed are high. The cost of manufacturing components at factories employing machine tools is often several times higher than the cost of manufacturing the same components at the factories where the machine tools are produced. 300 man-hours are consumed in the manufacture of a new 1K-62 screw-cutting lathe at the Red Proletarian plant against 500-700 man-hours to effect capital repairs on this machine; for a transverse planing machine, the respective figures are 470 and 540 man-hours; for a ZIL-150 automobile — 170 and 600 man-hours. The ratio of the cost of producing parts at the user plant to the cost of their production at the supplier plant is also characterized by the following figures (in percentages): for a drive shaft — 1,060, for a lead screw — 845, for a carriage screw nut — 540, for a sheave — 470, for a carriage screw — 290.

The underdeveloped condition of repair and modernization work specialization leads not only to high costs for such work, but also to a considerable diversion of equipment and manpower. More than one third of the country's machine tools and 14-18% of its manpower are engaged in the repair of industrial equipment. As a result of the automation of basic technological processes and the low level of repair work mechanization, repair personnel at petroleum processing plants reaches 50% and more of total manpower complements. At many metallurgical enterprises, up to 40% of the workers are employed in the servicing and repair of equipment. In individual branches (the nitrogen industry, synthetic rubber, basic chemicals) maintenance personnel comprises 40-50% of production worker strength.

The creation of plants specializing in the production of spare parts and in repair and modernization work will increase the productive capacity of the national economy by improving the quality of repair and modernization jobs, by cutting the time required to perform them, by releasing part of the equipment employed in the repair and modernization of basic plant right at the user enterprise.

Great importance also attaches to problems involved in the improvement of repair and modernization processes at existing specialized enterprises, and also by plants producing the equipment and its spare parts. It is important, for example, that plants be correctly specialized in the production of spare parts for those types of equipment (domestic and imported) that are most prevalently used in this or that economic council jurisdiction. The equipment-producing factories should increase their output of spare parts, in order that the production of many parts and assemblies directly in the maintenance shops of user enterprises may be discontinued.

There is now an urgent need to plan the output of components and assemblies required for modernization work from standardized plans, and also to extend the standardized planning of modernization work. Between 1956 and 1958, even in the machine-tool industry — a leading branch

of industry — only about 100 standard schedules were worked out for the modernization of universal metal-cutting lathes. It would be advisable, for the further expansion of machinery modernization and a radical reduction of its cost, to oblige machine-tool manufacturing plants and the designing bureaus attached to economic councils to draft standard schedules for the modernization of machine tools as soon as they are taken off mass-production lines and replaced by new models. The technical design institutes attached to economic councils must also be commissioned to draft plans for the modernization of machine tools (where they cannot be drawn up at supplier factories).

The application of improved repair techniques constitutes one of the most important factors in the reduction of repair costs. Thus, in the coal industry, the cost of reconditioning parts is 15-50% of the cost of new parts. In 1957 the Moscow auto repair plant No. 2 spent 5.4 million rubles to recondition parts which would have cost 16.4 million rubles at list price. Flywheels for the STZ-NATI tractor, sold at 130 rubles list price, are reconditioned at the Cherkassk repair plant at a cost of 48 rubles 16 kopecks, and crankshafts — 220 rubles list price — at a cost of 50 rubles 17 kopecks each. However, problems involved in the reconditioning of parts (beading, welding, metalizing, chroming, etc.) are not receiving adequate attention. In the same coal industry, in the capital repair of equipment at repair enterprises, reconditioning accounts for only 10-15% of all repaired parts.

At a series of enterprises in the metallurgical industry where well-outfitted repair facilities are available, repair operations follow a staggered schedule with the replacement of assemblies and even of individual types of equipment. Such an organization of repair operations sharply shortens the time required for them. The practical implementation of this schedule has been greatly facilitated by the creation of repair shops jointly operated by and specializing in the servicing of rolling mills, smelting and blast furnace works, forge press shops, etc., and also of equipment of standard structural design. Further improvements in the organization of staggered repair schedules have extended their applicability to such large-sized metallurgical plant as blast, open-hearth and electric furnaces, which had formerly proved impossible to repair by parts.

High-output technological processes in the coal, metallurgical and certain other branches of industry are making heightened demands on the heat resistance, strength and durability of equipment. Machinery plants and ship maintenance yards, for example, have to produce many spare parts for harvesters, cutting machines, scraper conveyors and other types of equipment. In the meantime, the demand for spare parts may be sharply reduced through bi-metalization, the improved working of metals, the use of plastics, etc.

The wearing out of basic plant and the cost of repair work depend also on the design of repaired machines. This design should provide for the replacement of manual by forced lubrication, which reduces the wear of certain parts by about 20%, and also protects them against dust and dirt, which reduces wear by about 8-10 times.

On the basis of generalizations from cumulative experience in the machine-building industry, a unified system has

now been drawn up for planned preventive maintenance, which is being applied at all machine-building enterprises. Planned preventive maintenance has found widespread application in metallurgy, the chemical industry and certain branches of light industry. There is as yet, however, no established system for planned preventive maintenance in the petroleum, leather, footwear, dyeing and felt, fur, tanning and extracting, glass and several other branches of industry.

The norms prevalent in many branches of industry (coal, sewing, porcelain and glazed ware) for labor and material inputs for the repair of production equipment are obsolete and in need of revision. There are unjustifiable disparities among the planned preventive maintenance systems in force at various enterprises. Identical equipment, operated under analogous conditions, is often assigned to different repair complexes. The result is that varying quantities of labor are required to repair the same machine from one system to another. Thus, as an object of capital repair, the TN-15 screw-cutting lathe, manufactured in the automobile and tractor industry and assigned to the 7th repair complex, requires 54 man-hours per unit of repair complex and 378 man-hours for the complete capital repair job; the same lathe, produced in local industry and assigned to the 8th repair complex, requires 60 man-hours per unit of repair complex, and 480 man-hours for the complete capital repair job; the same lathe, made in the communications industry and assigned to the 9th complex, requires 60 man-hours per unit of repair complex and 540 man-hours for the complete capital repair job.

In order to put the organization of repair work in order, to lower its costs and improve its quality, it would be good to devise routine preventive maintenance systems in all branches of industry that would embrace more extensive segments of basic plant (not only production equipment); to work out new and to revise old standard quotas for the issuance of materials and work pieces, basing them on the standards presented in the "Unified System for the Routine Preventive Maintenance and Operation of Technological Equipment in Machine-Building Enterprises," and also on the departmental standards of the various branches of industry; to include in the system of organization of routine preventive maintenance of individual branches of industry standards of labor inputs and of the periodical frequencies at which modernization work is to be done.

The perfecting of the repair and modernization financing system and the carrying out of measures to improve their quality and lower their cost are important conditions for the successful accomplishment of the majestic aim of the seven-year plan — the plan of full-scale communist construction in our country.

Notes

(1) The difference between expenditures on capital repairs and amortization deductions is covered from the budget, profits of business organizations and other sources. Thus, budgetary funds cover expenditures on capital repairs of highways, the basic care of public health, and other budgetary establishments and organizations.

(2) Vide K. Marx, Capital, Vol. II, 1954, pp. 170-175.

M. Atlas, V. Kopnyayev and E. Mitelman: On Ways to Improve the Utilization of Industrial Working Capital

S. Barngoltz, A. Sukharev, *Oborotnye Sredstva Promyshlennyykh Predpriyatiy (Obrabatyvayushchei Promyshlennosti)*. Gospolitizdat, 1957, 392 pp.

S. Barngoltz, A. Sukharev, *The Working Capital of Industrial Enterprises (in the Processing Industry)*. State Publishing House of Political Literature, 1957, 392 pp.

It is of great national economic importance that the problems of the organization of working capital of socialist enterprises and of accelerating the turnover of this capital in the sphere of production and circulation be worked out, and also that the wealth of experience acquired in this field be reduced to valid generalizations. Suffice it to say that the total amount of working capital available today to the enterprises and business organizations in all branches of the USSR national economy exceeds 500 billion rubles. This huge bulk of the country's pecuniary resources, comprising the working production funds and the circulating funds of industry, transport, agriculture, trade and other branches, is called upon, side by side with the basic plant sector, to ensure the continuity of the processes whereby the national product is regenerated, and also through which the socialist accumulated surplus is created and distributed.

The rational acceleration of working capital turnover helps to speed up the rate of surplus accumulation and, consequently, of expanded regeneration as well. By relieving the scarcity of working capital for the fulfillment of plans of production and of product realization, the acceleration of the working capital turnover makes possible the utilization of working capital thus released for additional product outputs at a given enterprise or the diversion of these funds, through the state budget, to the additional financing of expanded reproduction and social-cultural projects. Hence, together with the reduction of factory costs, as a chief contributor to the growth of socialist accumulation, the acceleration of working capital turnover constitutes an important reserve for the mobilization of internal resources in the national economy. The book by S. Barngoltz and A. Sukharev, on the working capital of industrial enterprises, is of a certain interest in this connection. It consists of three sections. The first section (Chapters I-III) sets forth the fundamentals of working capital organization, the principles of its allocation and methods for analyzing the utilization of enterprise working capital. The second section (Chapters IV-V) discusses ways by which to improve the utilization of working capital in production inventories and in the production process, and the third section (Chapters VI-VII) on ways to improve the utilization of working capital in the field of circulation, in finished product inventories and in settling accounts.

The authors have drawn general conclusions from the practice of the planning and utilization of working capital of various branches of the processing industry and have demonstrated the immense significance of Marx's doctrine on capital circulation to practical socialist economic management. In spite of the fact that the book was written prior to the reorganization of industrial management, it

shows the negative influence of the old forms of industrial management on the utilization of working capital.

But the book as a whole is not uniformly successful: there are slipshod statements, a few incorrect assertions and some questions have not received sufficiently full treatment.

It very often happens that, in monograph work, much too much attention is given to a presentation of various points of view which meet with opposition and enjoy no support. The authors of the work under review have gone to the other extreme, and have given too little attention to an analysis and criticism of those utterances with which they disagree. Thus, when examining the method for computing the index of working capital turnover, Barngoltz and Sukharev take turnover to be represented by the realization of products at the wholesale prices of enterprises before deduction of the turnover tax. This point of view, however, is debatable. They should also have discussed the position of those economists who distinguish, for example, between the concepts of the turnover of working capital and of its utilization. They understand working capital turnover as the time of the advancing of the value of working capital, for the determination of which account must be taken of realization at cost price. As regards, however, the utilization of working capital, in connection not only with advance times, but also with the product cost level, in this case it is more correct to regard realization in other terms: as enterprise wholesale prices.

The presentation of the question of cost management may be pointed to as an example of the incomplete treatment given in the book to some important questions. On page 283 the authors speak of the conversion of factories to cost management and of the significance of this measure for the strengthening of cost management and for the better utilization of working capital. But they have passed over another aspect of the question in silence — the possibility and necessity of the conversion of small enterprises to the non-shop operating system and of the related revision of working capital administration within individual enterprises to achieve more effective and flexible maneuverability of assets.

Let us now pass to an analysis of the separate chapters of the work. It should be noted that the authors introduce interesting data in their presentation of the content of the category of working capital and of the significance of the acceleration of its turnover. They remark that, in a socialist economy, the relative importance of industrial working capital in the sphere of production is steadily rising: on January 1, 1951 it reached 58% throughout industry as a whole, and on January 1, 1956, stood at 60.6%. The relative decline in the importance of working capital in the sphere of circulation has been furthered by the improvement of the debt settlement system: in all clearing accounts throughout the USSR, the share of current reciprocal demand payments has risen from 13% in 1946 to 26% in 1950 and 46% in 1956.

This same chapter offers a definition of working capital: "The working capital of socialist industrial enterprises expresses the value of the current production assets (in the form of raw materials, basic and auxiliary supplies and other production stores, and also the value of unworked and semi-finished products less depreciation), that part of the

value of basic plant which is consumed in the production process (in the form of depreciation and transferred to the value of unworked, semi-finished and finished products), the value of low-cost and expendable instruments of labor brought under the heading of current assets, and the value of circulating assets in their commodity and monetary forms (as finished products in various stages of realization, cash resources and accounts receivable reflecting the delay in the conversion of circulating assets from the commodity to the monetary form). All these elements enter into circulating assets to the value of the expenditures (advances) incurred, i.e., by their prime cost." (p. 22) Although this definition correctly links the value expression of working capital with its physical content, it cannot be regarded as adequate. It is, above all, too cumbersome. Moreover, it cannot be asserted that working capital expresses the value of physical assets. Working capital is money invested in convertible production materials and circulating assets, low-cost and expendable articles being also conventionally charged to production materials. There is no doubt but that the value of unfinished and finished products also includes the value of basic plant to the extent of its wear (depreciation) in the process of producing the finished product. But, as regards charges for depreciation, it is from them that, as we know, compensation is made for the wear of basic plant, and they cannot enter into working capital as their independent selves. The definition speaks of finished goods at various stages in their realization and of accounts receivable reflecting the delay interval in the conversion of circulating assets from the commodity to the monetary form. There is a repetition in this case, since, as it happens, unsettled accounts with buyers (goods shipped and goods not paid for in time by buyers) constitute one of the stages in the realization of finished products.

There are other positions, too, advanced by the authors in this chapter, which cannot be agreed with. Thus, on page 57, they write: "The absence of planned targets in the acceleration of the turnover of assets in goods shipped was one of the factors contributing to lengthening the average haulage distance during the fifth five-year plan." In reality, departmental barriers exerted their negative effect here, having been, as we know, serious obstacles to the straightening out of intrabranh and interbranch business relations.

The second chapter of the book discusses methods of determining the requirements of enterprises in working production materials and circulating assets, and particularly methods for computing standard normal stocks on hand of various forms of material values and goods in process. The authors correctly emphasize the great importance of accurately calculating transitory stocks of goods in process, since this index is necessary to the plan not only to determine circulating capital requirements, but also so as to be able correctly to plan for the production schedule volume. When examining the question of standardizing the various forms of production stores, Barngoltz and Sukharev correctly note the undesirable consequences which ensue from the setting up in the plan of understated and excessively strained storage standards. In the determination of average storage weights the authors, quite correctly, in our view, recommend that not the full supply cycle, but half of it, be taken as a basis, i.e., half totals of the maximum and minimum inventory limits. The remark of the authors on the importance of mechanized computing work for the detailed standardization of stocks on hand of the individual concrete forms of physical assets, is important. However, the authors are inaccurate when they assert that

data on the consumption of individual materials, parts and semi-finished work pieces and on their outstanding balances in terms of value are lacking at enterprises that do not have calculating machine sections. Turnovers of individual forms of materials, not only in their natural, but in their value expression as well, occur at all enterprises where the turnover data, as entered on inventory journal accounts, are adjusted by adding together the turnover transactions as entered on the individual accounts of the standing inventory record.

The statement made in the book on the constituent elements of production time is, in our opinion, incorrect. This time is regarded as embracing the working period and intervals in the processing of work pieces. (p. 135) It follows from Marx's pronouncements, however, that production time includes, apart from the working period and the duration of predominantly natural processes, also intervals in the production process and, finally, the time during which the assets remain in the form of stored physical values ready to enter the production process.

When defining the general coefficient of unfinished production or, as it is called, the cost rise coefficient, the authors show only one of the methods by which the outlays of each day are reckoned as completed from the very outset. But a result of this method is that the general coefficient of incomplete production is overstated. It would be more correct to proceed from the premise that, within each day, successive outlays accumulate at a uniform rate; then the cost rise coefficient will not be overstated. Doubt is raised in this connection by the assertion of the authors that "raw and basic materials enter upon the production process from its very outset, and hence their value is regarded as a simultaneous outlay." (p. 142) In reality, this does not always happen, even with parallel production lines, not to speak of consecutive and parallel-consecutive arrangements for the movement of semi-finished goods in production.

It should be remarked that, while examining in detail the method for determining the general cost rise coefficient for incompleting production, the authors have not pointed out the peculiar features which occasion the uneven rise of production costs, and which relate to the specific conditions of the production process.

The third chapter, devoted to an analysis of the utilization of working capital, gives primary attention to an examination of general indices of the turnover of all the working capital of an enterprise, and also of the turnover of the separate elements of working capital. It is correctly remarked that it is insufficient, for the determination of steps to be taken to improve working capital utilization, to limit oneself only to an evaluation of the general index of fulfillment of the capital turnover plan, but that a profound analysis must also be made of the partial indices of capital turnover in its sub-groups and constituent elements. To this end the authors have worked out and set forth a commendable method for coordinating partial and general indices of capital turnover, presented as formulas for conversion from partial to general turnover indices, (pp. 179-181).

Unfortunately, the description of the various capital turnover indices in the book does not include a clear statement of the central economic essence of the concept of turnover; besides, the authors have made some assertions that require clarification. Thus, partial turnover indices, calculated on the basis of balances on hand and individual debit and credit entries for the separate forms of capital, are illegitimately identified with average inventory quantities. (pp. 179, 182) Meanwhile, the daily turnover of

separate forms of working capital represents the average time that capital values remain in this or that form or stage in a cycle prior to their conversion or transition to the next form or stage of the cycle. But when computing partial turnover for a given period, recourse is usually had to the average remaining balances on hand and to the transactions for that same period: for example, in an analysis of turnover during the first quarter, average remaining balances on hand are taken for the same first quarter. This method of calculating partial turnover allows only an approximate determination of the actual time that capital remains in one form or another. If, however, the scale of work and the absolute outstanding material inventories rise steadily, then a comparison of the consumption of a material during the given quarter with the outstanding inventory balance of this material for the same quarter will result in an understatement of the duration of individual turnover stages. In reality, the time spent by materials on the shelf will be greater. The longer the duration of the turnover stage and the more intensive the rise in the scale of operations, the greater will be the margin of error, the more understated the computed quantity of daily turnover. Hence, the indices of partial capital turnover cannot be identified with actual daily inventory.

The authors recommend the establishment of only two forms of stocks for each type of material, for purposes of inventory control: maximum-stocks and minimum-stocks, the latter serving at the same time as a reserve. This recommendation seems disputable. A special examination should have been made of the question of the usefulness of establishing, along with minimum, also reserve or emergency stocks. While the book goes more than once into the problem of these stocks, the method of determining them remains, nevertheless, insufficiently developed.

In their analysis of outstanding balances of unfinished production, the authors have omitted the question of the influence of feeding materials into auxiliary production on the index of materials turnover in the production process, that results from a comparison of summary balances of unfinished production with the output of commodity production. It is known, however, that, at enterprises with high-capacity auxiliary production operations and shops, these drain off a rather considerable quantity of the materials accounted for in the over-all unfinished production balances.

When examining ways to improve the utilization of capital in the form of production stores, the authors give serious attention to questions of specialization and cooperativization, of economizing on material resources in the process of their productive consumption, of the improvement of supply planning and of strengthening contractual compliance, to the improved organization of operational-supply work and warehouse management. They correctly emphasize that the unjustified curtailment of standard inventory and unfinished production quantities strains the process of plan fulfillment and has a deleterious effect on the results of enterprise operations.

The book poses the question of the concrete ways of combining the transit and warehouse supply procedures, each of which offers its own advantages under one set of specific circumstances or another. It seems to us, however, that the authors have somewhat restricted the possibility of applying the practice of material and technical supply in transit shipping. "Raw materials and supplies," they write, "the average daily, or weekly expenditure of which exceeds at enterprises the transit, or even the order level, are most conveniently supplied, of course, on a transit basis." (p. 262) In our view, it is also useful to

use transit supply when the transit and order levels exceed monthly, and sometimes even quarterly expenditures (particularly of auxiliary supplies).

It is remarked on page 291 that "shortening the production cycle decisively accelerates capital turnover because a corresponding increase in production volume is achieved at the same time..." This is only true in those cases where the shorter production cycle has been obtained by curtailing labor time and the duration of predominantly natural processes with adequate provision for increased production from an additional inflow of materials. In those cases, however, where the production cycle has been shortened by cutting down on nonoperating time, and also when enterprises suffer a shortage of one material or another, a shortening of the production cycle may not, after all, be reflected in an increased output volume, in any case during the interval before the inflow of the materials in short supply increases.

When studying the entire complex of problems involved in the organization and rational utilization of enterprise working capital, it should be borne in mind that the basic problems here are two — the two parts of the over-all problem of working capital organization. The first is the method of determining the requirements of enterprises in working production assets and circulating capital, particularly in the production of any given transitional supplies of material commodity assets and unfinished goods. This aspect of the problem is adequately treated in the monograph.

The second problem relates to the sources for building up stores of working production materials and circulating assets. It is no accident that in 1931, when working capital was allocated to industry, these two aspects of the question received independent and thorough consideration; on the one hand, the over-all basic principles were formulated for determining the sizes of stocks of materials necessary to enterprises and, on the other, exact limits were set to the utilization by enterprises of their own and borrowed assets as sources for building up these stores. It was established particularly that owned working capital should supply the requirements of enterprises in minimum stocks of material commodities (standards), and that borrowed assets, in the form of State Bank loans, should supply enterprise requirements in seasonal stocks and seasonal production costs, and also in money at the time when accounts are settled between suppliers and buyers.

During the time, however, since the credit reform was carried out, radical changes have taken place in the relative importance of sources for the formation of enterprise working capital. These changes have been chiefly reflected in a considerable enhancement of the role of banking credit, i.e., of the centralized state loan fund, in the formation of enterprise working capital, by displacing owned enterprise working capital. This process has gone forward on the basis of an increasingly extensive transition from State Bank financing of material supply in excess of standard requirements and of production costs to financing, in which the owned working capital of enterprises participates, of the commercial, and later of the production turnover of enterprises and business organizations. Moreover, the growing importance of banking credit among the sources of working capital formation is also related to the constantly increasing development of the so-called payment or special purpose credits, advanced by the State Bank to enterprises for paying suppliers' bills and for closing out clearing accounts.

These processes were reflected in the extended practical application of short-term financing of the national

economy from so-called special loan accounts. The result of this has been that most payments by far made by business organizations engaged in commodity operations are effected with the aid of banking credits. In turn, the importance of banking credit as a source for the formation of industrial working capital is steadily rising. Thus, a comparison of data as of January 1, 1941 with data as of January 1, 1957, shows that owned enterprise working capital has grown 2.5 times during this period. State Bank credits, invested in industry, have grown 3.2 times during the same period and today constitute 40% of the total working capital needed by industry for building up and maintaining material commodity stocks and for covering production costs.

It is natural that a work on the working capital of industrial enterprises should reflect, and correspondingly evaluate, the changes which have gone forward in the relative importance of sources for the formation of industrial working capital. Unfortunately, the book under review does not, in point of fact, discuss these questions excepting for a brief reference by the authors to objects of credit in various branches of industry and an extremely condensed presentation of questions of industrial financing, including turnover credits. (pp. 68-74)

Reference should also be made in this connection to the one-sidedness of the authors' description of State Bank credit as a guarantee of the continuity of enterprise capital circulation in cases where, during the drafting of payment calendars of enterprises, "unavoidable time lapses are revealed between the arrival of materials and capital and their expenditure..." (p. 58) Actually, the role of short-term State Bank credits is much more important. When working capital circulation is organized according to plan on the scale of the national economy and of each individual enterprise, State Bank credits account for a large part of the payments turnover of trade organizations, whether or not the materials and capital are expended as soon as they arrive. This is stressed with special vividness in the above-cited figures in the high relative importance of State Bank credit among the sources for the formation of the working capital of industrial enterprises.

In their next work on problems of industrial working capital organization, the authors should give these questions more intensive and extensive treatment. Also, the problem of the sources for the formation of industrial working capital and of the rational combination of owned and borrowed resources should be examined as organically related to questions of the organization and standardization of physical inventories both in the sphere of production and in the sphere of distribution.

In spite of the series of flaws remarked upon, the reviewed monograph by Barngoltz and Sukharev constitutes a useful work. In our opinion, it may also be used as a study aid by students in VUZes of economics and in the engineering-economic departments of technical VUZes.

I. Mayevsky:

A Book on the History of the Economic Development of Russia

P. A. Khromov, *Ocherki Ekonomiki Feodalizma v Rossii*. Gospolitizdat, 1957, 367 pp.

P. A. Khromov, *Essays on the Economy of Feudalism in Russia*. State Publishing House for Political Literature 1957, 367 pp.

One of the most important tasks of Soviet economists and historians is the study of the economic development of our homeland and of foreign countries. Without searchingly analyzing the socio-economic history of a given country, without studying the distinctive features in the development of its productive forces and production relations, the conformity to universal law of the historical process cannot be understood. The founders of Marxism-Leninism gave a great deal of attention to the study of the history of the economic life of nations. In a foreword to Volume I of *Capital*, Engels wrote that Marx's economic theory "is the result of a life-long study of the economic history and position of England..." (1) Lenin showed that the most important thing in the scientific working out of problems "is not to forget the fundamental historical connection, to regard each question from the point of view of how a certain historical development arose, which chief stages did this development undergo in its evolution..." (2)

A considerable number of monographic researches have come out in recent times on historical subjects. There are still a few problems in the economic history of our country which require further creative elaboration. Among these are problems of the economic development of Russia during the period of Feudalism, to which P. A. Khromov has devoted his monograph.

The work under review analyzes the chief theoretical problems of the feudal mode of production: feudal ownership of the land, forms of pre-capitalist rent, industry in the age of Feudalism, the internal market, foreign trade, money, usury and other forms of credit and, finally, finance.

In the introduction, the author notes the distinctive features of Feudalism in Russia, its emergence and development not from slave-holding configurations (as was observable in Western Europe), but out of the dissolution of the primitive-communal order, the unique evolution of forms of feudal land ownership and pre-capitalistic rents, of the methods by which wealth was first accumulated in Russia, etc. All this supports the conclusion that, while the basic features of the historical development in Russia and in the West were the same, there were, as Lenin wrote, tremendous differences, both economically and otherwise.

Khromov points out the role of local ownership in the struggle of Ivan IV against the boyars, presents data on the changing correlation between local landowners and the great landed estates and so forth. Thus, whereas during the 20's of the XVIIIth century more than 70% of the great private landholdings were owned in private title, by 1678 only 41% were so held. While presenting these facts, however, Khromov fails convincingly to clarify the reason for the sharp reduction in the number of private landholdings by the end of the XVIIIth century.

The author begins his investigation into the feudal mode of production with an analysis of the emergence of the feudal form of land ownership as its economic foundation which, in our view, is methodologically sound. The genesis of feudalism is primarily the process of the emergence of feudal property and a dependent peasantry. As feudalism developed at the expense of the peasant communal lands, so expanded land ownership by princes, boyars and monasteries.

Khromov analyzes the unresolved problem of free peasantry landholdings. It is known that, as feudalism developed, the "free" peasant holdings were seized by various means by feudal lords and the church. There were almost no such lands left in the central districts of the country by the XVIth century; they

were preserved only in the north and the northwest of the country. Certain authors maintain that the "free" lands were the property of the peasants. Academician N. M. Druzhinin, for example, supposes that the free peasantry "disposed of (these lands) virtually as landowners." (3) The author of the book under review comes to another conclusion. "During the first stages of feudalism," he writes, "the lands of the free peasants were their communal property. But later, with the growth of feudal relations, the state, in the person of the grand duke, and then of the lord, began to regard itself as the proprietor of these lands, too, which were held by the free peasants." (p. 45) We cannot agree with this assertion of Khromov's.

The problem of pre-capitalist rents is closely bound up with the problem of ownership. In the foreword to Volume II of *Capital*, Engels wrote that Marx, while studying the agrarian question, came to the conclusion: "What with the diversity of forms of landownership and of exploitation of the agricultural producers in Russia, in the section on land rent Russia was bound to occupy the same position as was occupied by England in the study of industrial hired labor in Book I." (4) On this basis, Comrade Khromov gives a detailed analysis of all three forms of rent — labor service, kind and money.

In his examination of the question of labor rent, the corvee or "barshchina," the author writes that it prevailed in Russia roughly from the XVIIth to the second half of the XVIIIth century. At the same time he disputes the view held by M. N. Pokrovsky, P. I. Lyashchenko and others, according to which rent in kind (natural produce) was the prevalent form in Kievan Russia. In Khromov's view, historical documents tell a different story: that the corvee was the predominant form of rent in Kievan Russia. It was only after the collapse of the unified state, i.e., already during the period of feudal dissolution, did rent in kind become the dominant form in the Russian principalities.

The author draws on the Cadastres, the publications of the Archaeological Expedition, the proceedings of the Volnoi Economic Society and other literature to show the extent of the prevalence of the various forms of rent in the individual districts of the country and among the separate categories of peasants (manorial, church, etc.). He concludes that "all forms of pre-capitalist rent were present in Russian feudalism. The emergence of new forms of rent did not signify the total disappearance of pre-existing forms; the new form did not completely displace the old; it is hence more correct to speak of the most prominent, the prevalent form of rent at a given historical stage of development." (p. 94) Comrade Khromov holds that pecuniary rent began to be important in the economy of Russia only during the second half of the XVIIIth century, although the corvee continued predominant during this period among some of the manorial peasant serfs. In this connection he writes: "... The greater part of the surplus product created by the feudal peasantry of Russia was appropriated by the landowners (the state, the landlords and the church) during the last quarter of the XVIIIth and the first half of the XIXth centuries in the form of pecuniary rent, while the corvee still retained considerable importance and rent in kind had acquired little significance." (p. 94)

Unfortunately, when setting forth the problems of feudal land ownership and of forms of pre-capitalist rent, the book under review fails to analyze thoroughly the development of productive forces in Russian agriculture. Without this, it is impossible graphically to show the dynamics of agricultural labor productivity, harvest yields, etc.

Examining the forms of industry in the age of feudalism and their development in connection with the growth of

productive forces, with technological innovations, and production specialization, etc., the author notes that, purely artisan industries being prevalent, there was commodity turnover, but no commodity production. But, with the development of commodity-money relations, the artisan began to produce for the market, i.e., he became a petty commodity producer.

The book sets forth in detail the debatable question of shops in Russia. It is known that opinions differ on this question among Soviet economists and historians. Some of them (P. I. Lyashchenko and K. A. Pazhitnov) deny the presence of shops of Russia prior to the XVIIIth century, while others (M. N. Tikhomirov, S. V. Yushkov and B. A. Rybakov) assert their existence. It is the view of Comrade Khromov that the causes which brought about the emergence of shops in Western Europe (competition among artisans, their need for unity against the feudal nobility, etc.) were also active in Russia. For all the peculiarities of the feudal system as a whole and of the artisan crafts in particular, it was the crafts which, together with the rural peasant economy, served as the base on which the feudal mode of production was built both in Russia and in the countries of Western Europe. However, the level of artisan corporate development in Russia was lower than in West European countries. Khromov refutes the arguments brought forward by certain investigators to prove that there were no corporate artisan relations (the absence of fixed shop personnel complements, an imagined weakness of the artisan crafts, etc.) prior to the XVIIIth century. In Khromov's view, the "ulitsy," the "ryady," the "sotni," the "brat-chiny," etc., were unique forms of artisan corporate organizations in the XIV-XVth centuries. (p. 126)

Starting from the premise that the capitalist way of life is born in the womb of feudalism, Comrade Khromov investigates such forms of industry as the simple cooperative and manufacturing, and shows how heavy machine industry originated. He is at his most thorough in his examination of manufacturing, which was uniquely modified by the distinctive peculiarities of Russian economic development. The author notes that the heavy industrial enterprises of the XVIIth and of the first half of the XVIIIth century were socio-economically heterogeneous: there were in Russia, on the one hand, capitalist manufactories that employed hired labor and, on the other hand, patrimonial and estate enterprises that made use of forced labor. The book traces the development of manufactory production in metallurgy, textiles and other branches of industry, and shows the nature and breakdown composition of the manpower in manufactories, and the role of hired labor in industry.

Unlike several historians who hold that most enterprises in Russia employed forced labor, Khromov concludes that, up to the peasant reform, about one third of the workers in Russian heavy industry consisted of forced laborers. (p. 180) The author criticizes researches who in their calculations omit petty industry, where hired labor was an important factor, and thereby exaggerate the significance of forced labor.

The book states the point of view of the author on the industrial revolution in Russia: "... The industrial revolution in Russia," Khromov writes, "was predominantly the outcome of internal processes that had been going on in the economic structure of our country..." (p. 183) However, he has not traced the chronological boundaries of the industrial revolution with sufficient care. It turns out that the revolution began with the introduction of machines in individual factories of Russia at the end of the XVIIIth and in the first quarter of the XIXth century. (pp. 183-184) But this can hardly be regarded as correct, since a few

machines did not revolutionize the entire industrial production of the country.

A large section of the publication under review is devoted to questions relating to the emergence and development of commodity production under feudalism. Thus, a searching analysis is made of domestic trade (its forms, geography, price movements, the interests of the individual classes in trade, etc.); the influence on commerce of the "price revolution" that took place in Western Europe in the XVIth century, of the consequences of the reunification of the Ukraine with Russia and of the elimination of internal customs barriers, is shown, as also the commercial role of merchant capital, etc. During the XVIth century, the price of bread on the domestic market went up 4.5 times, of cattle — 2.5 times, of meat — twice, of iron — from 3.5 to 4 times, and so forth. The author concludes that "as manufactory production grew and the pan-Russian market became stronger, merchant capital began largely to shift from the sphere of distribution to the sphere of production... By organizing the manufactories and large-scale mechanical production, merchant capital became increasingly industrial capital." (p. 225)

The book under review analyzes the foreign market of the age of feudalism as intimately connected with the development of the domestic market: it describes the trade carried on by the Slavs with the Arabs in antiquity, the distinctive features of the foreign trade of the feudal principalities during the XIIIth and XIVth centuries, commodity exchange with the Hanseatic League, trade relations of the Russian state in the XVth century with India and, somewhat later, with China, Russian trade with Western Europe, with the East, the tariff policies of the Russian government, etc.

The study of the development of money relations is very important to an understanding of commodity production. The book under review devotes a special chapter to the development of money and of its function in the economic structure of feudal Russia. It shows how the functions of money evolved with the growth of commodity production, the feature of monetary circulation in individual feudal principalities, the evolution of the currency system in connection with the emergence of the centralized state, gold and silver circulation and the appearance of paper currency in Russia (in 1769). It is characteristic for the feudal period in Russia that the purchasing power of money declined and prices rose as a universal tendency.

The development of usury and other forms of credit is organically bound up with the expansion of commodity-money relations. The book reviews the evolution of usury, its role in the development of lord-serf relations, etc. At the same time, it is emphasized that usury capital exploited not only the peasantry, but also the suburban artisan population: sometimes even petty lords fell into the grip of the usurers. The author views the credit system as a kind of reaction against usury and, in this connection, he shows how credit contributed to the formation of manufactories.

The emergence of state credit institutions in Russia is put in the first half of the XVIIIth century. The growth of credit for commerce and industry was an expression of the development of commodity and capitalist relations in the country. The commercial-industrial bourgeoisie made use of credit to an increasing extent in the XVIIIth and XIXth centuries. "With the development of the capitalist manufactories, and later of factories, there also emerged a credit system as a discrete form of industrial capital." (p. 306) The author cites the peculiar features of credit in feudal Russia during the XVIIIth and XIXth centuries: the servicing by state credit institutions chiefly of landowning nobility and, to a lesser extent, the merchant-industrial

bourgeoisie, the considerable relative importance of usury as a condition for the growth of commercial credit.

Analyzing the finances of feudal Russia, the author dwells on such questions as the nature of highway duties, the taxation of separate categories of the feudal peasantry, the emergence of monetary taxes, etc. The book explains the highly important reform of the XVIIth century: the conversion from the "sokha" [wooden plow — transl.] as a rate unit to taxation by households. Khromov is of the opinion that taxation was based on the "sokha" as early as the period of feudal disunion. Together with this, taxes were assessed "by persons" and by physical condition. The "sokha" tax, however, can scarcely be contrasted with the tax on physical condition, since, at that period, it probably stood for the number of workers required for the cultivation of a determinate tract of land. During the period when feudal disunion was giving way to centralized rule, the autonomous tax assessment units, the local "sokhas," were done away with and the tax system of Muscovy was extended to annexed principalities. The result was that the "Moscow sokha" ousted the local "sokha's," "vyti," "Obzhi," etc., which had been current in various regions of the country, although certain peculiar features of these forms of taxation continued to subsist later on.

With the final enslavement of the peasantry, the feudal monarchy made the landowners responsible to the treasury for the payment of the "sovereign's" taxes of their peasants. "The size of the tax due from each specific unit was determined later by means of 'assessments' and 'differentials' among the individual taxable peasants... A bitter class struggle developed over the communal apportionment of taxes between the upper and lower strata of town society behind the walls of the burgh." (p. 349) The book shows the role of farms in the financial system, especially of vineyards, and the budgetary structure of feudal Russia.

Unfortunately, the book under review does not elucidate as it should certain important traits of the economic structure of Russian feudalism; materials are particularly lacking on population movements and the development of transportation in feudal Russia. No treatment is given to such a scientifically fundamental question as: When did the feudal production relations begin to act as a drag on the development of the productive forces? The book examines the period of the decline and crisis of the feudal mode of production in Russia but does not touch on the problem of the correspondence of the production relations to the character of the productive forces at separate stages of feudalism, the question of the rising and falling stages of feudal evolution.

Khromov remarks that "our historico-economic thought has not yet worked out a universally acceptable chronology for the economic history of feudalism in Russia" (p. 5), but he himself does not attempt to chart the basic stages in the development of the feudal mode of production in Russia.

It is known that, when working out a chronology of feudalism, some researches have proposed to base it on the sequence of displacement of one form of rent by another, others on the level of development of the market, and yet others on the class struggle. Khromov writes in this regard that not one of these factors "can provide an exhaustive basis for the charting of a chronology. The level of development of the feudal mode of production, the level and distinctive features of the development of the productive forces and production relations, the character of the class struggle as a whole must be taken as the foundation for a description of one historical period or another of the feudal-manorial society. At the same time, special attention should be given to the description of feudal rent and of

feudal landownership, which are the determinant factors in the feudal mode of production." (pp. 5-6) This point of view, however, requires more thorough discussion.

Although Khromov's work concerns the history of the development of the economic structure, it should nevertheless have presented material on the more extensive background of the general political history of feudal Russia. It is a defect of the book that the author has not made use of the wealth of archive material, which would have permitted him to work out much more thoroughly several questions of the economic history of feudal Russia.

On the whole, the book under review, in spite of isolated defects and gaps, deserves favorable mention. It will contribute to the further elaboration of the history of the economic development of Russia.

(Continued on Page 95)

Yu. Belyayev:

The Economic and Cultural Upsurge of the KPDR

The Development of the National Economy and Culture of the Korean People's Democratic Republic between 1946 and 1957. Statistical handbook. Central Statistical Administration of the KPDR State Planning Committee. State Publishing House, Pyongyang, 1958, 192 pp.

The statistical handbook on the development of the national economy and culture of the Korean People's Democratic Republic between 1946 and 1957, published in that country at the end of last year, was prepared by the Central Statistical Administration of the KPDR State Planning Committee. This is the first work of its kind to appear since the people's democratic order was first instituted in North Korea. The material brought together and arranged in tables gives a clear picture of the tremendous successes achieved by the Korean workers during the years of the people's regime in all areas of socialist construction.

The handbook contains information on the economic and cultural development of the KPDR both during the pre-war years (1947-1949) and in the post-war period, including 1957 — the first year of the first five-year national economic plan of the republic. The handbook consists of eight sections: "Summary Section," "Industry," "Agriculture," "Capital Construction," "Transportation and Communications," "Trade," "Culture and Public Health," "Territory and Population of the World, Industrial and Agricultural Production in the Foremost Countries of the World." The figures presented in the handbook are compared with 1946 (the first year of the recovery period), with 1949, when the level of industrial production in colonial Korea was reached, and with 1953, which preceded the beginning of the post-war recovery and development of the republic's national economy. Such comparisons make possible a fuller evaluation of the successes of the national economy of the KPDR.

The data in the handbook attest first of all to the triumph of the general line of the Workers' Party, aimed at the total annihilation of the exploiter classes and at ensuring the supremacy of socialist production relations. The relative importance of the socialist sector of the economy in the national income rose from 14.8% in 1946 to 93.5% in 1957; in the gross output of industry it increased during the same period from 72.4% to 98.7%, in the gross yield of agriculture (including the personal subsidiary farming of farm cooperative members) — from 3.2% in 1949 to 88.2% in 1957, and in

retail trade — from 3.5% in 1946 to 87.9% in 1957. The process of agricultural cooperativization and of the socialist transformation of private industry and commerce was completed in August, 1958, thereby also assuring the undivided supremacy of socialist production relations in all areas of the country's economy. The KPDR has entered upon the period of the completion of the building of the socialist society.

The handbook also reflects the changes that have taken place in the class structure of the country. As socialist industry recovered and continued to develop and as the cooperative movement grew, members of the population, workers, employees and peasants, became members of farm cooperatives in steadily increasing numbers. At the end of 1957, workers and employees were over 44%, against 18.7% in 1946, and about 50% were members of agricultural production cooperatives. At the same time, the relative importance of capitalist elements shrank from 3.5% in 1946 to 0.4% at the end of 1957.

The causes of the rapid rate of development of the productive forces of the KPDR have been the supremacy of socialist production relations in the republic and the close economic cooperation with the USSR, the Chinese People's Republic and other countries of the socialist camp. In spite of the terrible losses inflicted on the national economy of the republic during the war of the Korean people against the American imperialists, only two years after peace was concluded gross industrial production had reached 144% of the 1959 level and, by 1957, had surpassed it by 2.6 times. The average yearly rate of growth of industrial production over the four post-war years was 43%. Last year industrial production in the country was increased by another 40%. This means that in 1958 the industry of the republic achieved a gross output which was almost 4 times greater than in 1949.

The rapid growth of industrial production in the KPDR is being achieved through the predominant development of heavy industry. This is attested to by the following figures from the handbook (in percentages of 1953 figures):

	1954	1955	1956	1957
All industry:	151	224	285	412
Of which:				
Production of means of production	189	308	405	592
Production of consumer goods	128	174	209	299

The handbook also presents materials describing the absolute growth of the most important forms of industrial production. Whereas in 1954 the republic produced a total of 1,955 million kilowatts of electric power, by 1957 this production had climbed to about 7 billion kilowatts; during the same period coal mining rose from 2 million to 5 million tons, steel production increased correspondingly from 55.7 thousand to 277 thousand tons, chemical fertilizer production from 22 thousand to 323 thousand tons, cement from 231 thousand to 900 thousand tons.

During the years of the people's democratic order, side by side with the branches of industry previously present in the republic and which continued to develop, new branches were created (the production of mining and electric power equipment, a machine-tool industry, new branches of the chemical and metallurgical industries, a textile and a food-

processing industry).

During the period from 1946 to 1957 inclusive, the volume of machine-tool and textile production rose almost 30 times, of mining equipment — 7.4 times, of pharmaceuticals — 44 times, of building materials — 42.6 times, of leather footwear — 70.7 times. The domestic machine-building industry produced more than 12 thousand electric motors, 6.8 thousand transformers, and more than 1,000 various metal-working lathes in 1957. The output of a new branch of the machinery industry — farm machinery — increased in 1957 to over 22 times the 1949 level.

The production of consumer goods in the republic is growing by leaps and bounds. This is the result of the economic policy pursued by the Workers' Party, aimed at the

predominant development of heavy industry with a simultaneously rapid growth of light industry and agriculture.

Fabric production in the KPDR in 1957 increased to more than 66 times the 1944 level and amounted to more than 91 million meters per year, footwear production exceeded 18 million pairs a year. The output of vegetable fats was 19 thousand tons, and the fishery output was more than 560 thousand tons.

In connection with the successes achieved in the development of the country's economic structure, per capita production in the most important industrial lines has risen considerably. This is attested to by the following summary table, presented in the handbook:

	Unit of Measurement	1946	1949	1953	1956	1957
Electric power	Kw.	423	631	132	590	764
Coal	Kg.	136	434	92	450	552
Steel	Kg.	0.5	15	0.5	22	31
Iron	Kg.	0.3	18	—	22	30
Sheet metal	Kg.	1	12	0.5	15	23
Chemical fertilizer	Kg.	17	43	—	23	36
Cement	Kg.	11	57	3	69	99
Fabrics	M.	0.3	1.4	2.8	9	10
Footwear	Pair	—	0.6	1	2	2
Fishery production	Kg.	—	29	16	47	65

The achievements of the workers of the KPDR can be appreciated with especially graphic clarity if the results of the republic's economic development are compared with the economic situation of South Korea. While in the KPDR the gross industrial production volume in 1957 exceeded the 1944 level by more than 3 times, the industrial production volume of South Korea had hardly reached half the level of 1944 production. According to data for 1956, South Korea lagged behind North Korea in per capita electric energy output by 11.6 times, coal — a little over 5 times. Only 2 kg. of cement and 5 kg. of steel were produced per capita in South Korea. Iron and chemical fertilizer are not being produced at all in South Korea. The supremacy of the American monopolies in South Korea has had the effect of curtailing national industries. National production, particularly, is satisfying the demand for consumer goods by only 20-30%. The bulk of heavy industry production is being removed beyond the borders of the country.

Quite a different picture meets the eye in the KPDR, where in 1956, as compared with the pre-war year of 1949, per capita electric power production has increased 1.2 times, steel — more than double, iron — 1.7 times, fabrics — 7 times.

The KPDR has achieved considerable successes in the training of skilled specialist cadres. The materials in the handbook bear witness to the further rise in the technical level of industrial workers. While over-all employment figures throughout the national economy rose from 574 thousand in 1953 to 844 thousand in 1957, i.e., a rise of almost 1.5 times, the total number of engineers, technicians and specialists increased by a little more than 3 times. Unfortunately, the handbook does not offer figures on changes in the employment in terms of percentages of the total population and on the relative importance of engineering and technical personnel in the individual branches of industry.

By supplying all branches of the national economy with up-to-date technical equipment and steadily improving workers' skills, the productivity of the country's workers has been considerably increased. The materials of the handbook show that labor productivity in the KPDR in 1957 exceeded the 1953 level in industry by 2.4 times, in capital construction — by 1.4 times, in railway transport — by 2.6 times. Between 1954 and 1956, an average of 58%, and in 1957 — 70%, of the rise in industrial output was achieved through an increase in labor productivity.

The success achieved in the industrialization of the country is reflected in the continued and intensified concentration of socialist industrial production. This is attested to by data on the classification of industrial enterprises in accordance with the number of workers they employ. Thus, of the total number of industrial enterprises, the number of enterprises employing more than 1,000 workers grew from 6.3% in 1954 to 9.1% in 1957. During the same period, the number of workers at these enterprises increased from 34.7% to 42.2%.

The handbook shows how the branch composition of the economic structure of the KPDR has changed in the course of the recovery and socialist industrialization of the country. Thus, the contribution of industry to the total gross output of industry and agriculture increased from 46.7% in 1949 to 63.4% in 1957. Industry has become the leading branch of the national economy. In 1957, it accounted for about 38% of the national income, while agriculture accounted for 29%. At the same time, thanks to the predominant growth of heavy industry, the relative importance of means of production in the gross output of industry was 54.2% in 1957 against 37.7% in 1953. This bears witness to the transformation of the KPDR over a brief historical period from a backward colonial country into an industrial-agrarian country with a rapidly growing socialist industry.

The book under review presents figures on the growth

capital investments in the republic. In 1957, about 58% of the total amount of capital investments went into industry, of which 48.6% went for heavy and 9.3% for light industry.

The handbook materials on questions of the republic's agriculture reflect the process of development of the cooperative movement in the Korean countryside. Despite the circumstance that the mass cooperative movement got under way in the country only in 1954 (only 31.8% of all farms had joined cooperatives), i.e., later than in other socialist countries, it has achieved a conclusive triumph in less than five years. Cooperativized agriculture now has a new task to accomplish: the further organizational and economic consolidation of the cooperatives and the strengthening of the technical base of agriculture.

The turn taken by the Korean peasantry to the socialist road of development has made possible the solution in a short time of one of the most complicated problems of the economic development of the republic — the grain problem. In 1957, 3.2 million tons of grain were harvested, i.e., 32% more than in 1944. This is unprecedented in the entire history of Korean harvests.

It should be noted that, while per capita grain production reached 320 kg. in 1957 in the KPDR, in South Korea the same figure was only 163 kg. While South Korea, which once was the granary of the country, has been obliged to import a considerable supply of grain and other farm products (during the period from 1949 through 1956 alone the volume of grain imports to South Korea increased by more than 10 times), the KPDR is not importing grain from abroad at the present time.

The KPDR has fewer by far arable lands than South Korea. The total area under cultivation in the republic, according to data for 1957, was 1.9 million hectares, of which 1.4 million hectares were unirrigated and 502 thousand hectares were irrigated. Hence agricultural production in the republic could only be increased by intensive farming methods (irrigation construction, the electrification and mechanization of farm operations). As shown by the handbook figures, during the period from 1949 through 1957 total area under cultivation increased by 7%, the area of steadily watered rice fields, requiring constantly operating irrigation facilities, increasing by 31%. The number of machine-rolling stations grew from 15 in 1953 to 50 in 1957, and the number of tractors (in terms of 15-horsepower units) from 764 to 2,554. The number of hectares plowed by tractors increased from 95 thousand in 1953 to 54 thousand in 1957, i.e., an increase of almost 9 times. Unfortunately, apart from these figures, the handbook contains no other information on the level of technical equipment of agriculture and on the mechanization of basic farm operations.

Thanks to the successes achieved in the intensification of agriculture, the average harvest yield of the basic farm crops has considerably increased. Thus, the average harvest yield of irrigated rice was 29 hundred-weights per hectare in 1957 against 25 hundred-weights in 1944, of corn — 14.9 hundred-weights against 6.7 hundred-weights respectively. The vegetable harvest yield has undergone an especially outstanding increase — of more than 3 times.

One of the distinctive features of agricultural development in the country over the years of the people's regime, as shown by the materials in the handbook, is the rapid advance of cattle raising side by side with soil cultivation and, in connection with this, the increasing share of cattle-raising production in the total volume of agricultural output. While gross agricultural output increased 73% between 1953 and 1957, cattle-raising production rose by more than 2.6 times.

The steady growth of socialist production in the KPDR has made it possible to heal the deep wounds inflicted by the war in a short time and to secure a systematic augmentation in the material welfare and cultural level of the popular masses. During the period between 1946 through 1957, the national income of the republic grew 4.2 times, and, in per capita distribution, 4.3 times. The average monthly wage of the worker and employee rose to 2.4 times the 1949 level, and the retail price index in state and cooperative trade in 1957 was 53% of the 1953 level. As a result, the real income of workers and employees had reached the 1949 level as early as 1956 and, by 1958, had exceeded it by 1.5 times.

Retail commodity trade has considerably increased over the years of the people's regime. In 1957 the population of the republic bought consumer goods (1) to the value of 92.2 billion hwan (at current prices) against 39.9 billion hwan in 1953 and 18.1 billion hwan in 1949. In 1957, the over-all volume of retail trade was 2.7 times greater than in 1953.

Each year that passes witnesses an expansion of housing construction in the KPDR. Over the first three and a half post-war years alone (second half of 1953 to 1956), 13.4 million square meters of living space were reconstructed, i.e., about half of the living space destroyed during the war. In 1957 about 3 million square meters of living space were released for occupancy.

The handbook contains interesting figures on popular education and public health. The number of persons receiving instruction in the republic in the year 1957-1958 was over 2.2 million against 913 thousand in 1944-1945. In 1957-1958, 20 institutes (there was not one single institute in the country prior to 1946) and 135 higher and intermediate specialized schools were operating. In 1957-1958, the institutes of higher and intermediate learning were giving instruction to over 92 thousand persons against 33 thousand in 1946-1947. In 1957 alone, about 4 thousand students graduated from institutes and 11 thousand from secondary specialized schools.

A sharp growth has taken place in the number of students enrolled at elementary and incomplete secondary schools: from 878 thousand in 1944-1945 to 1,378 thousand in 1957-1958 in elementary schools, and from 17 thousand to 642 thousand respectively in incomplete secondary schools. Universal compulsory elementary education was introduced in the KPDR in 1956 and, as of November, 1958, universal compulsory incomplete (seven-year) secondary education.

The republic has achieved great successes in public health. The number of physicians almost tripled between 1946 and 1957. During the same period, the number of hospitals grew 3.8 times. The network of nursing homes, sanatoriums and children's nurseries has been considerably expanded. As a result of measures carried out by the Party and the government to improve public health in the republic, mortality has been sharply reduced. Whereas in 1944, 20.8 persons per 1,000 died, in 1957 the number was only 13.5. The net population increase in 1957 was 32.8 against 10.5 per 1,000 in 1944.

The handbook material gives a description of the successes achieved in the industrial development of the republic. Unfortunately, however, the handbook fails to include several important indices such as, for example, the dynamics of basic production capital throughout the national economy as a whole and in the individual branches of industry, a breakdown of the national income and a few others. It would be desirable if the handbook were to reflect the development of the foreign trade relations of the KPDR with the socialist countries, especially the Soviet Union and the

Chinese People's Republic. These gaps notwithstanding, the first statistical handbook on the development of the national economy and culture of the KPDR, generalizing the experience and distinctive features of socialist construction, will make a great contribution to the further development of economic science in the Korean People's Democratic Republic.

Note

- (1) Including public and cooperative retail trade and public catering.

A. Ginsburg, V. Evropin:

A New Journal — The Economics of Construction

A new monthly journal of the State Committee on Construction of the Council of Ministers of the USSR (GOSSTROY), *The Economics of Construction*, began publication in January, 1959. Its most important purpose is to increase the knowledge of economics of managerial, engineering and technical personnel engaged in construction, the dissemination of advanced experience in work in economics, and also the organization and conducting of discussions on fundamental questions of the economics of construction.

It is proposed to discuss in the journal questions involved in increasing the productivity of labor and the economic effectiveness of construction, district zoning, the enlargement and specialization of construction organizations, the development and distribution of material supply and production bases for construction, questions of the improvement of the planning and financing of construction, the reduction of construction costs, the strengthening of cost management and several other urgent problems.

Issue No. 1 of the journal contains an article by the deputy chairman of GOSSTROY, S. Ginsburg, which discusses in detail the basic ways to develop construction as a branch of the national economy during the forthcoming seven-year period. The author shows that, even before 1965, the USSR will surpass the USA in the per capita production of several of the more important building materials (cement, walling materials, etc.). The article gives considerable attention to questions of the improvement of construction planning, particularly to questions of the priority concentration of capital investments and means of production in initial and essential projects.

The author poses the question of the necessity of reducing construction costs by curtailing the installation and assembly costs of industrial enterprises through the implementation of progressive project decisions. These should provide for the installation of an enterprise in one single building, with blocked-off shops, the construction of "flexible" shops measuring 30-50-100 meters without intervening

supports, the construction of enterprises in several branches of industry (petroleum, chemicals, etc.) in the form of open installations with small shelter arrangements for operational personnel. All this will make it possible to increase the relative importance of the equipment — the most actively operating part of the basic capital — and to ensure the increasing supply of technical equipment to and productivity of labor.

An article by V. Girovsky and M. Gurevich offers a detailed analysis of the construction program for 1959-1965. From examples of the growth of capital investments in the various branches of industry, the authors show the importance of targets assigned to the construction industry during the seven-year period, the necessity for sharply improving economic work in construction so as to increase the effectiveness of capital investments.

An article by S. Bashinsky, "The Chief Ways of Improving Production and Planning Norms in Construction," gives a brief review of the state of production and estimate standardization in construction and charts the ways by which they can be improved. The author introduces the suggestion to determine estimated costs at only one project stage.

An article on this same subject by V. Malyugin (Issue No. 2) discusses the question, which is very important in the economics of construction, of replacing cumbersome estimates and accounts by unit quotations with list prices for finished products. The author describes the work that has been done to set up list prices per square meter of living space and shows their effect on the reduction of housing construction costs and the further reduction of installation and assembly costs.

Questions of cost reduction in installation and assembly work are treated in an article by V. Uspensky and A. Yungorov, and also in an article by N. Tarasov on the acceleration and cost reduction of turbine electric power station construction (Issue No. 1).

P. Podshivlenko has written an article (Issue No. 2) on increasing the effectiveness of capital investments by regulating the planning and reducing the volume of unfinished construction.

Issue No. 2 also contains articles on the experience of builders in Kuibyshev, Leningrad and Kiev. The deputy chairman of the Kuibyshev economic council, M. Chentemirov, has written an article raising the important question of improving the performance record of construction organizations. V. Mikhailov and L. Kaspin relate the experience acquired in the construction of apartment houses from large brick blocks in Kiev. Their article points out untapped reserves for further increasing the effectiveness of such construction.

An article by E. Strzhalkovsky describes the achievements and operating procedures of the Central Construction Authority of Leningrad and brings out the interesting fact of the introduction in Leningrad as of July 1, 1957, of a new system of remuneration for hauling building materials on trucks based on a unit rate independent of the distance, load class and load capacity of the vehicle.

REVIEWS

G. Gertzovitch:

The Economic Development of the Socialist World System

The majestic program of communist construction in the USSR, adopted at the XXist Congress of the CPSU, inspires not only the peoples of the Soviet Union, but the peoples of the other countries of the socialist camp and the workers of all the world as well. The realization of the grandiose plan for the development of the national economy of the Soviet Union will constitute an enormous contribution to the further growth and strengthening of the socialist world system, to the strengthening of the cause of peace and international security.

The socialist world system is a commonwealth of independent socialist states enjoying equal rights; its economic foundation is the public, socialist ownership of the means of production. The emergence on the international scale of new, socialist economic relations is characteristic of the socialist world system. The countries of socialism are linked to each other by brotherly friendship, collaboration and mutual assistance, they are unified by a common ultimate goal — the construction of communist society. The transformation of socialism into a world system and the emergence and consolidation of the socialist camp are the determinant factor of the current stage of social development. The camp of socialism is imbued with the great transforming force of Marxism-Leninism. The socialist world system is decisively affecting the entire course of historical development, and gives mighty moral support to all the forces that are fighting for peace, democracy and social progress.

The current stage in the development of the socialist world system is signaled by the full and conclusive

triumph of socialism in the USSR, the entry of several people's democracies into a period of completion of socialist construction, the successful laying of the foundations of socialism in other countries of the socialist camp. The common objective of the peoples of the countries of socialism is the creation, development and completion of the material and technological base of socialism and communism. This is precisely the reason why all the countries of socialism are now witnessing a headlong expansion of material production, a steady improvement in the material well-being of their peoples and an unprecedented flourishing of science and culture.

With the transformation of socialism into the socialist world system, there began a new phase in the economic contest of socialism with capitalism. The successes of the countries of the socialist camp demonstrate irrefutably that socialism, as a social system, enjoys a tremendous superiority over capitalism. Socialism guarantees the development of productive forces and the improvement of the material prosperity of the workers at a rate unprecedented and not to be achieved by capitalism.

It is a universal inevitability that the socialist mode of production affords a rapid rate of economic development. Socialism ensures, particularly, a high and stable rate of growth of industrial production. Industrial production has risen throughout the entire socialist camp at an average rate of 11% per year over the last five years (1954-1958), which is almost four times higher than the rate of growth of industrial production throughout the entire capitalist world.

A comparison of data on the development of industrial production in the countries of the socialist world system and in several capitalist countries in 1958 gives vivid testimony of the tremendous feats performed by the workers of the countries of socialism in the steady and rapid growth of social production.

Development of Industrial Production in Socialist and Capitalist Countries in 1958 (in percentages)

Socialist Countries	Increase over 1957	Capitalist Countries	Change from 1957*
USSR	+10.0	USA	-7.0
CPR	+66.0**	England	-1.0
Poland	+ 9.5	France	+6.0
Czechoslovakia	+11.3	West Germany	+3.1
GDR	+10.9***	Italy	+1.8
Hungary	+12.0	Belgium	-6.5
Rumania	+ 9.7	Netherlands	0
Bulgaria	+16.0	Norway	-2.5
Albania	+20.0	Finland	-5.0
KPDR	+40.0	Denmark	0
MPR	+16.1****	Canada	-1.8
DRV	+40.0	Japan	+1.0

* Estimated

** Including artisan industry

*** See top of page 76.

**** State and cooperativized industry.

*** It is interesting to compare 1958 outputs of individual industrial products in the GDR and West Germany (in percentages):

	GDR (Increase from 1957)	West Germany (Decrease from 1957)
Steel	12.9	7.6
Rolled products	10.5	7.0
Machine tools	20.0	8.4
Equipment for chemical industry	28.0	16.1
Textile manufactures	10.7	6.0
Footwear	17.5	11.0

The high rate of economic development being achieved in every single socialist country is made possible by the priority development of the production of means of production, which makes it possible to fill the needs of all branches of the socialist economy for the various types of new technological equipment, and thereby leads to a constant increase in production volume, to higher labor productivity and to fuller satisfaction of the material and cultural needs of the workers.

As the socialist world economic system stands, given the mighty and diversified industrial potential of the Soviet Union, there is no need to develop all branches of heavy industry in each of the people's democracies (with the exception of the Chinese People's Republic, where the necessary conditions for this are present). Relying on fraternal mutual assistance and on the growing international socialist division of labor, the individual people's democracies are building up those branches of industry, above all heavy industry, for which they are economically and naturally suited and which most benefit both the individual countries themselves and all the countries of the socialist world system.

As a result of the rapid rate of economic development of the socialist countries, the total volume of their industrial production in 1958 was five times greater than the pre-war level, while the total industrial production of the capitalist countries over the same period increased by less than double. Between 1950 and 1958, the Chinese People's Republic increased its industrial production by roughly ten times. The volume of Polish industrial production rose in 1958 to more than 5.5 times the pre-war level; in Czechoslovakia, to 3.3 times; in the GDR, to 2.7 times; in Rumania and Hungary, to almost 4 times; in Bulgaria, to about 9 times; in Albania, to 18 times the pre-war level. The Korean People's Democratic Republic increased its industrial production in 1958 to 4.3 times the 1944 level.

In the Soviet Union industrial output in 1958 was 10% greater than in the previous year and industrial production was 36 times greater than the 1913 level.

Outstanding successes have been won by the Chinese People's Republic in the development of its economy through the implementation of its "great leap forward" program. The second session of the VIIIth All-China Congress of the Chinese CP, held in May, 1958, worked out the general line expressed in the militant slogan: straining every effort, striving ahead, build socialism on the principle of more, faster, better and more economically. The general line of the party was warmly approved by all the Chinese people.

The national economy of the country is growing at unprecedented speed. Long strides are being taken in industry, agriculture, culture and education.

As a result of the successful completion of the first five-year plan (1953-1957), China has moved up to tenth place among world steel producers, to eighth place in iron smelting, to fifth place in the world and first place in Asia in coal output. The leading branches of industry in the CPR are developing by leaps and bounds: metallurgy, machinery, electric power. The 1957 steel smelting production figures were doubled in 1958 to 11.1 million tons. We may recall that in old China, during the period from 1901 to 1948, i.e., almost fifty years, only 7.6 million tons of steel were smelted altogether. England, for example, took 32 years to increase its production to the same extent, France — 29 years, Japan — 20, the USA — 7 years. During 1958 alone, iron smelting in people's China was increased from 6 million to 13.7 million tons. Electric power production reached 27.5 billion kilowatts in 1958 (the 1957 figure was about 19.3 billion kilowatts), coal production was 270 million tons (against 130 million tons in 1957). Metal-working machine-tool production rose during the year by 22 thousand, to 50 thousand units.

The Chinese people have made remarkable strides in agricultural development. The gross grain harvest of 1958 was in excess of 375 million tons, or twice as large as the 1957 harvest. China has overtaken the USA and moved up to second place among the wheat-growing nations of the world. 3.35 million tons of cotton were picked in China in 1958, or double the 1957 level. In the CPR in 1958, per capita grain and cotton production was equivalent to more than 500 kg. and 5 kg. respectively. Thus, the grain supply problem has been largely solved in people's China. The gross output volume of industry and agriculture of the country rose in 1958 to 65% more than the previous year's output.

The tremendous successes achieved in the development of the economy of the CPR are the result of the program worked out by the Chinese CP for the simultaneous development of industry and agriculture, of heavy and light industry, through the priority development of heavy industry. The Chinese CP is committed to the simultaneous development of both industry under central authority and local industry, and to the construction not only of large, but of middle-sized and small-scale enterprises as well. The CCP has set the priority target for the current stage of socialist construction — the accomplishment of a technological revolution and of its close concomitant, a cultural revolution.

Substantial advances in building socialism have also been made in 1958 by other people's democracies, where industrial and agricultural production volume has also increased considerably, and the material well-being and cultural standards of the broad working masses have risen.

Thus, as compared with the previous year's level, the national income of Poland has gone up roughly 5.6% (in terms of equivalent prices), industrial production is up 9.5%, including production of means of production up 8.8% and of consumer goods up 10.2%. Coal production in 1958 was 2.6 times greater than in 1937, electric power production was 6.6 times greater, steel — 3.8 times greater, cement — 3.9 times and metal-processing machine tools — 4.9 times. Gross farm production rose by roughly 3% (in terms of equivalent prices). The average monthly real wage of the worker employed in the socialized sector (computed on the basis of the subsistence level index) rose by 3.5%. In Czechoslovakia, the 1958 production of industrial goods was up 11.3%, of farm products — 3.4%; in the GDR — up 10.9%

and 6.7% respectively, etc. According to preliminary figures, gross industrial output in 1958 was almost 4 times the prewar level in the European people's democracies. In the KPDR, gross industrial production has risen at an average yearly rate of 42% over the five post-war years (1954-1958). In the first two years of the five-year plan

(1957-1961) alone, industrial production has doubled.

As a result of the socialist industrialization of the countries of the socialist world system, the production of heavy metals, electric power, fuels and other products of heavy industry has considerably increased.

Production of Chief Products of Heavy Industry in the Countries of the Socialist Camp (in millions of tons)

	Pre-WW II Production Level	1950	1958	1958, in % of pre- war level
Electric power (in millions of kilowatts)	72.8	140.0	362.5	498
Coal	388.3	594.0	1,222.3	315
Petroleum	36.0	44.0	128.3	358
Iron	18.8	24.7	64.7	340
Steel	24.7	36.1	83.2	336
Cement	14.3	21.0	61.6	431

During the years of socialist construction, modern heavy industries, furnished with the most up-to-date equipment, have been founded in most of the people's democracies, and thousands of large-scale enterprises have been built. In the Chinese People's Republic, more than 10 thousand industrial projects were erected, including 921 over and beyond the number planned; in 1958 — the first year of the five-year plan — about 700 industrial structures were set into either full or partial operation.

Over recent years, measures have been put into effect in the countries of the socialist camp to perfect management and control of the national economy. These measures are aimed at further strengthening the Leninist principle of democratic centralism in building the economy. The improvement of national economic management and control is opening up even more ample avenues for the development of productive forces, is making possible fuller utilization of large reserves for the further advance of the economies of the socialist countries, is furthering in every way the development of the creative initiative and active participation of the broad working masses and is assuring a steady rise in their well-being. The national economic management reform, carried out in the USSR, China, Czechoslovakia, the GDR and other socialist countries, is already yielding positive results.

The socialist countries have also made solid gains in agriculture. The socialist reform of agriculture in China, the KPDR and Bulgaria has been substantially completed. Considerable advances have also been made in the cooperativization of peasant holdings in other countries. In Czechoslovakia, about 75% of all lands under cultivation are in the socialist sector, in Rumania — over 60%, in the GDR and Hungary — about 50%. In the Mongolian People's Republic, about 96% of the Arat lands have been cooperativized. The socialist transformation of agriculture ensures the growth of farm production. In 1958, the total grain harvest in the socialist countries increased by 75% and amounted, according to preliminary figures, to about 570 million tons.

The mighty economic advance of the countries of the socialist world system is accompanied by a steady rise in the relative importance of these countries as world industrial producers. In the economic rivalry of the two systems, the

socialist world system has gained outstanding successes over a relatively short historical period. In 1958, the socialist countries could already claim for themselves more than one third of the world-wide industrial output. The share of the socialist countries in the world production of the chief industrial products has considerably increased in the post-war period.

The Communist and workers' parties of the socialist countries have worked out plans for the further development of the national economies of their countries which are being successfully carried out.

A high rate of production growth in all branches of the economy is one of the salient features of the long-range plans for the development of the national economies of the socialist countries. Having achieved a new powerful expansion of the socialist economy, the Communist and workers' parties have given themselves a new target — considerably to raise the standard of living of the workers. This target is being reached through the rapid growth of the productive forces and of labor productivity — the most important factor for the triumph of the new social order.

The socialist countries will develop heavy industry — the basis for the growth of every socialist economy — at outstripping speed (as in previous years). Special importance is being given to the accelerated expansion of the chemical industry so as to most effectively exploit the natural resources of the socialist countries, for further technical progress in all branches of the national economy. The fuel and power, machine-building and metallurgical branches of industry will also be developed at a rapid rate. The continued rapid development in the socialist countries of heavy industry and the execution of measures to expand agriculture will make it possible considerably to increase the production of foodstuffs and industrial consumer goods.

The following figures on the planned growth of industrial production in the socialist countries give an idea of the rapid rate at which the economies of these countries will develop over the coming years. (See table on page 78.)

The high rate of economic development of the socialist countries refutes the theory of the bourgeois ideologues on the inevitable "dampening" of the rate of the development

USSR (1959-1965).....	80%
Poland (1959-1965).....	80%
Czechoslovakia (1959-1965).....	90-95%
GDR (1959-1965).....	80%
Bulgaria (1958-1965).....	3-4 times
KPDR (1957-1961).....	2.6 times
MPR (1959-1965).....	2 times
DRV (1958-1960).....	86.4%

of industry in the USSR and other socialist countries.

The Chinese People's Republic is making a new, gigantic leap forward in its development. Suffice it to point out that in 1959, gross industrial and farm production will be 40% higher than in 1958. Iron smelting is to be increased in the CPR to 23 million tons, coal extraction to 380 million tons, electric power output to 40 billion kilowatts, cement production to 12.5 million tons. A further leap forward will be taken in the area of agriculture. In 1959, 525 million tons of grain and 5 million tons of cotton will be harvested in the country. The American agency, Associated Press, reported on January 14th of this year that the CPR will apparently produce more rice in 1959 than all the other countries of the world together. The VIth Plenum of the CCP of the eighth convocation noted that the 1959 plan for the development of the national economy "will be a plan for an immense leap forward." The Plenum called upon all the Chinese people to fight heroically for the fulfillment and overfulfillment of the 1959 plan and to make an even greater leap forward than in 1958.

The gains made in the development of the national economy of Poland have created stable material and political conditions for a more rapid and harmonious development of the entire national economy. The IIIrd Congress of the Polish Workers' Party, held in March, 1959, adopted a program for the further expansion of the economy of the country and to raise the prosperity level of the workers.

The directives covering the development of the Polish national economy between 1959 and 1965 envisage an 80% growth of industrial production over 1958. This means that the volume of industrial production in Poland in 1965 will be almost 10 times greater than before the war. According to the plan directives, heavy industry should expand at a somewhat faster rate than branches engaged in the production of consumer goods. Farm production will grow during this period by roughly 30%. The general fund of consumption will increase by 1965 to 30-35% more than the 1960 figure. Over the next seven years, electric power production will increase 76% and the output of the machine-building and electro-technological industry, 73% (by comparison with 1960). In 1965 in Poland, 112-113 million tons of anthracite and 27 million tons of lignite should be mined, 43.5-45 billion kilowatts of electric power should be generated, 9 million tons of steel smelted, 10 million tons of cement produced. One of the chief lines of future industrialization in the country will be a considerable growth of the chemical industry, the output of which will grow in 1965 to 160% of 1958 figures. Much attention will be given to the further expansion of the light and food-processing industries.

In Czechoslovakia, the XIth Congress of the Czechoslovak CP has set the goal: by 1965 to increase the country's industrial production to 90-95% more than in 1957. This means that the prewar production level (1937) will be surpassed about 600%. Industrial production will increase over these years at the average yearly rate of 12%. By 1965 it is intended to raise the extraction of anthracite in Czechoslovakia to 35-36 million tons, of lignite to 77

million tons, electric power generation to 38 billion kilowatts, steel production to 9.2-9.7 million tons, cement production to 7 million tons. A great deal of attention is being given, as before, to heavy industry expansion, particularly in the fuels, machine-building and chemical industries. The rate of growth of the chemical industry during the third five-year plan period will be 55% higher than for the development of industry as a whole. The rapid growth of the consumer goods industry will assure the fulfillment of the plan for raising the standard of living of the workers.

In the German Democratic Republic, a draft is being worked out for a seven-year plan of development of the republic's national economy between 1959 and 1965, which envisages an 80% growth of industrial production. By 1965, industrial output will be roughly double the 1957 level. The industrial development of the republic over the period to 1965 will advance along the lines of development and perfecting of the coal and power supply base, metallurgy, mining and machine building. In the course of the future economic growth of the republic, special attention will be given to the chemical industry which, in the GDR, has already attained to a higher level of development and is provided with a good raw materials base and experienced workers, engineers and scientists. In 1958 the GDR was in eighth place in the world in output of its chemical industry, and in second place in per capita production. In the coming years the GDR will attain fourth place among the countries of Europe in respect of level of industrial production.

The VIIth Congress of the Bulgarian CP has set the further development of the material-technological base of socialism as the chief political-economic goal of the third five-year plan (1958-1962). The directives of the VII congress on national economic development over this period provide for a growth of gross industrial production of not less than 60% over 1957, and in agriculture, by roughly 35%. The October and November (1958) Plenums of the CC BCP have set the Bulgarian people the task of fulfilling the third five-year plan in 3-4 years.

In consideration of the gains made in the development of the national economy and of the growing initiative of the workers, a broadened plenum of the CC BCP, convoked in January, 1959, charted new, stepped-up rates of growth for several branches of the national economy. Thus, the gross output of industrial production must have doubled by 1962 and have grown to 3-4 times greater than the 1957 level by 1965. The 1957 output of the machine-building industry will have been increased 5 times by 1965, of the coal-mining industry — 3-4 times. It is intended to expand electric power output to 10 billion kilowatts (3 billion kilowatts were generated in 1958), steel production to 0.9 million tons, which will be 4.5 times greater than the 1959 level. The gross farm output of 1962 will be worth 40-45 billion levs, and 60 billion levs in 1965 (i.e., 45 billion levs more than the 1957 output).

Speaking before the IIIrd Session of the National Assembly on March 10, 1959, Comrade Zhivkov noted that the workers of Bulgaria are fighting to make a leap forward in the economic development of the country. "If these speeds are reached and maintained," Comrade Zhivkov said, "our productive forces will develop more rapidly, the material-technological base of the socialist order will be considerably expanded and consolidated, and the economic might of our country will be increased."

Plans for national economic development to 1965 are also being worked out in other socialist countries. Plans are being drafted in Rumania for a program to cover the next fifteen years, the first stage of which is an economic plan

r 1960-1965. Comrade Gheorghiu-Dej, speaking to the party activists in Bucharest in March, 1959, remarked that, as a result of the accomplishment of the 1960-1965 plan for the development of the republic's national economy, the Rumanian people will largely have completed the building of socialism and will move into a new phase — the phase of the perfecting of socialist construction.

In Hungary, the Central Committee of the Hungarian Socialist Workers' Party has set the workers the goal of achieving by the end of 1959 the 1960 targets planned in the three-year plan for the development of the national economy of the country (1958-1960).

The outlook for the further economic expansion of the Rumanian People's Republic has been defined in decisions taken by the Plenum of the CC of the Albanian Workers' Party, held in February, 1958. The Plenum of the CC AWP, in consideration of the successes achieved in the fulfillment of the tasks set by the IIIrd Party Congress in the area of national economic development, of the creative initiative of the working masses and of the fraternal assistance rendered Albania by the Soviet Union, has resolved to make considerable changes in the second five-year national economic plan of the republic (1956-1960): the over-all volume of industrial production is to be increased by 1960 not to 100% as previously intended, but to 142% more than in 1955. According to tentative figures, the European people's democracies will extract approximately 570-600 million tons of coal in 1965 (about 450 million tons in 1958); they will increase their electric power output to 175-180 billion kilowatts (94 billion kilowatts in 1958), their steel smelting output to 29-32 million tons (17 million tons in 1958). We may point out for comparison purposes that, in 1957, six best European countries (France, Italy, Belgium, Switzerland, Austria and Greece) extracted about 100 million tons of coal, generated 143 billion kilowatts of electric power and smelted about 31 million tons of steel.

Further powerful upsurges are being secured in the Rumanian People's Democratic Republic, in the Democratic Republic of Vietnam and in the Mongolian People's Republic. In the KPDR, the Korean Workers' Party has set the following goal: through active speeding up of the technical and cultural revolution, to increase production of the most important industrial products by 3-4 times over the next 7 years. The following production volumes are to be attained within that period: coal — 25 million tons, electric power — over 20 billion kilowatts, steel — 3-3.5 million tons, cement — 5 million tons. The workers of the KPDR are struggling pertinaciously to fulfill the tasks of the first five-year plan two years sooner than planned and to accomplish the long-range tasks set by the Party for the development of the republic's economy not within 6-7, but 4-5 years. The agriculture of the KPDR is also entering on a new phase. The congress of workers' cooperatives of the republic, held in January 1959, set a two-year goal of increasing grain production roughly two times, cotton — 4 times, meat — 4.4 times, silk — 8 times, fruits — 2 times. Thus, it is intended within 2-3 years to bring the grain harvest up to 7 million tons (3.7 million tons in 1958) and the cotton crop up to 200 thousand tons. The results of the fulfillment of the national economic development plan for the first quarter of 1959 show that the goals set by the Ruman Workers' Party will be reached ahead of schedule. The working class of the KPDR is striving to complete the building of socialism at a "chenlima" (1) pace. As compared with the same period of the previous year, during the first quarter of 1959 industrial production in the republic increased roughly 80%. By the end of March, 1959, industrial production had reached 87% of the level planned for

1961.

The Vietnam Workers' Party, at the XIVth Plenum of its CC (December, 1958), drafted the following program for the economic development of the republic: for the present and for a while longer to develop farm production by every possible means, to regard agriculture as the chief link in the development of the economy; at the same time to give main attention to the production of food crops. Along with agriculture, heavy and light industry will also be strenuously developed in the republic. The three-year plan for the development and reconstruction of the economy of the DRV (1958-1960) envisages a growth of gross industrial and agricultural production 78% higher than in 1957. The value of gross farm production will rise 73.6% during this period, of industry and artisan production — 86.4%, and of large-scale modern enterprise production — 169%. The construction of 96 industrial plants is planned for 1960 in the republic. It is expected that the total rice crop will be increased to 7.6 million tons, which will bring the per capita production of rice up to 500 kg. (287 kg. in 1957).

As a result of the fulfillment of the seven-year plan for the development of the national economy of the USSR and of the long-range plans for the economic development of the people's democracies, the share of the entire socialist system in world industrial production is increasing. Whereas at the present time the industrial output of the socialist world system comprises more than one third of the world output, calculations show that, by 1965, more than half the world industrial output will be produced by the countries of socialism. In this manner, the superiority of the socialist world system over the capitalist world system will be secured in the decisive sphere of human endeavor — material production.

One of the most important factors for growth of the productive forces and for raising the standard of living of the popular masses is the close economic cooperation of the socialist countries, which is securing the most rational and effective exploitation of the natural and economic resources of all the socialist states and a radical increase in the productivity of socialized labor. Close economic cooperation is enabling the socialist countries successfully to solve the more important national economic problems. It is making a tremendous contribution to the rapid economic growth of the people's democracies and to the consolidation of the entire socialist world system.

The foreign trade relations of the socialist countries are expanding. Between 1950 and 1957 commodity exchange among the socialist countries increased 2.6 times, while the physical value of capitalist trade over the same period increased only by 1.5 times. The total foreign trade of the socialist countries, including their trade with capitalist states, amounted in 1957 to about 100 billion rubles, or more than 10% of all world trade, whereas in 1959 it amounted to 39 billion rubles, or 8% of world trade. The commodity exchange of the Soviet Union with foreign states rose by 2.6 times between 1950 and 1958.

As a result of Soviet industrialization, the commodity structure of the imports and exports of the countries of the socialist world economic system has been fundamentally altered. These countries, which formerly exported mostly farm products and industrial raw materials, now export industrial products in considerable proportions, including machinery and equipment. Thus, for example, machinery and equipment comprised 11% of the total exports of Hungary before World War II, 0.4% (2) for Bulgaria, 6% in Czechoslovakia, 1.5% in Poland, 0.8% in Rumania (1948). In 1958, these items comprised 13% of Rumania's exports,

36% of Hungary's exports, about 27% (2) of Bulgaria's, 22% of Poland's, and over 40% of the exports of Czechoslovakia. By 1957, industrial products had risen to 31.5% of the exports of the Chinese People's Republic against 17.9% in 1952. Finished goods comprised over 60% of the exports of the Soviet Union in 1958, including 18% machinery and equipment. The exportation of machinery and equipment from socialist countries is increasing yearly.

Due to the further development and intensification of economic cooperation among the socialist countries, the overwhelming bulk of their foreign trade is done with

countries of the socialist world system.

The Soviet Union is collaborating in every way with its sister socialist countries in the construction of hundreds of large-scale national economic projects. The Soviet Union is placing credits and various other kinds of assistance at the disposal of the people's democracies on very favorable terms.

During the years of the first five-year plan in China, with the collaboration of the Soviet Union, 166 large-scale projects were built, of which 68 had been put in operation either fully or in part by the end of 1957. As a supplement

Development of the Foreign Trade of the Socialist Countries*

		1951	1952	1953	1954	1955	1956	1957	1958
China	1950 = 100	143	156	195	205	265	262	240	295
Poland	1950 = 100	105	104	109	125	130	140	156	158
Czechoslovakia	1948 = 100	135	142	161	173	200	232	251	262
GDR	1948 = 100	151	173	223	271	280	313	391	408
Hungary	1950 = 100	123	138	151	161	177	149	182	203
Bulgaria	1952 = 100	—	—	123	130	129	179	263	278
Albania	1950 = 100	170	—	178	—	—	203	290	377

* At current prices

to existing agreements on the rendering by the Soviet Union of technical assistance for the industrialization of the CPR, a new Sino-Soviet agreement was signed on February 7, 1959, for collaboration in the construction in the CPR between 1959 and 1967 of 78 large enterprises of the metallurgical, chemical, coal, petroleum, machine-building, electro-technical and radio-technical industries, of a building-materials industry and electric power stations. The over-all value of Soviet equipment deliveries, design work

and other forms of technical assistance envisaged by the agreement will amount to about 5 billion rubles. A Soviet-Korean agreement, signed on March 17, 1958, provides that the Soviet Union will give the KPDR technical assistance in the construction of diesel electric power stations with a capacity of 200 thousand kilowatts, of plants for the production of ammonia and polychlorvinyl, of flax and wool-spinning and weaving mills, and also in the expansion of the Kim Chak metallurgical works and of the Pyongyang silk-

Share of the Socialist World System in the Foreign Trade of the Individual Socialist Countries (in percentages)

	1951	1952	1953	1954	1955	1956	1957
China	51	72	75	80	82	75	75
Poland	—	—	—	70	63	62	59
Czechoslovakia	62	71	78	75	57	64	65
GDR	76	75	76	76	72	73	73
Hungary	—	—	—	71	61	63	70
Bulgaria	92	89	86	87	88	85	85
Albania	—	—	—	—	—	97	96

spinning and weaving mill. The total value of Soviet equipment deliveries and other forms of technical assistance stipulated in the agreement will be about 500 million rubles and will be paid on the Korean side by deliveries to the USSR of standard Korean export commodities. Deliveries by the Soviet Union of machinery and equipment of the people's democracies are of first importance for their industrialization. The USSR is also satisfying the need of the socialist countries for important raw materials. Thus, in 1957 the share of the USSR in the total imports of member-nations of the Council of Mutual Economic Assistance was: in petroleum — over 90%, in iron ore — about 80%, in copper — 75%, in rolled products — 57%, in cotton — 67%, and in grain — the bulk of all imports.

In their turn, the people's democracies are rendering aid

to the Soviet Union, supply the latter country with equipment for several industrial projects under construction and also industrial and farm commodities. Here are a few examples. By 1960, Poland will have shipped to the Soviet Union the full equipment for four sugar mills and ten factories for the production of hollow concrete building blocks. Czechoslovakia will have shipped equipment for sugar mill and also mobile electric power stations; between 1958 and 1960, the GDR will have delivered the complete equipment for seven cement and twenty three sugar mills, and also mobile electric power stations, etc.

Economic cooperation among the people's democracies is expanding: Czechoslovakia is supplying other socialist countries with complete equipment for electric power stations and chemical, cement and other enterprises currently

der construction; the GDR is exporting complete equipment for the construction of electric power stations, rolling mills, chemical and cement factories and several other enterprises; Poland is supplying complete equipment for the construction of sulphuric acid, cement and sugar factories and other enterprises.

The socialist countries are cooperating in the construction of several important projects. Thus, Rumania, the GDR, Czechoslovakia, and Poland are jointly constructing Rumania a combine to manufacture cellulose from reeds; Poland, the GDR and Czechoslovakia are conjointly developing the extraction of Polish coal for their common benefit. The Chinese People's Republic is rendering tremendous aid to the people's democracies of Asia. In February, 1959, an agreement was signed at Peking for economic and technical assistance by the Chinese People's Republic to the Democratic Republic of Vietnam. According to this agreement, the government of the CPR will extend the government of the DRV a long-term loan in the amount of 300 million yuan (at 2% per annum with payments in commodity shipments over a period of ten years starting in 1967) and an outright gift of 100 million yuan to assist in the construction of metallurgical plants, coal mines, shipyards, phosphate fertilizer plants, electric power stations, railway lines, textile mills, in sum, for the construction and expansion of 49 industrial and transportation enterprises. China will also make available to the Democratic Republic of Vietnam design data and needed equipment, will send specialists of the DRV to direct the construction of enterprises, the installation of equipment and the operation of the completed plants. At the same time, Vietnamese workers will undergo production training in China.

With the formation of the socialist world economic system, a great deal of importance has become attached to the problem of the organization and development of rational international socialist division of labor — the interstate specialization and cooperativization of production in the socialist countries.

"International division of labor," Comrade Khrushchev pointed out in his report to the XXII Congress of the CPSU, especially in its highest form — specialization and cooperativization — is called upon to play an important part in the economic development of the socialist camp. This is fraught with new, additional potentialities for the growth of production throughout the socialist camp and in each individual socialist country. Acting on its own, no single country could have developed at such a rapid pace as is being made by the socialist state system." International socialist division of labor is the cornerstone of all concrete forms of economic collaboration among the socialist countries and, naturally, is very important for the development of the productive forces of the socialist countries.

Special emphasis has been placed in recent years on the development of such a form of economic cooperation among socialist countries as the coordination of their long-range national-economic plans for the development of interrelated branches of their economies, which is securing a considerable speed-up in the technical progress of their national economies and is contributing very greatly to the accelerated construction of the material and technological base of socialism and communism.

Vast resources are available to the socialist world economic system for the further successful development of all branches of modern industry. The development and perfecting by every possible means of production specialization and cooperativization among the socialist countries is an indispensable pre-condition to more rational exploitation of the natural resources, economic potential, manpower and

historically evolved productive skills of the populations of the socialist countries. Only through international socialist division of labor is it possible to make the most effective use of all the resources of the socialist countries for the benefit of both the socialist system as a whole and of each individual country. The socialist countries rely in their development not only on their own resources, but on the material base of the whole socialist world economic system as well. The future interstate specialization and cooperativization of production through the comradely coordination of plans for interrelated national economic branches will involve the onset of a new phase in the development of international division of labor among the socialist countries. The rational geographic distribution of production, with a harmonious combination of the national interests of each socialist state with the interests of the consolidation and development of the entire socialist camp, is one of the most important sources for the acceleration of the rate of growth of the productive forces of all the socialist countries.

The expansion and intensification of diversified economic collaboration among the socialist countries does not mean their economic isolation from the other countries of the world. The national economic plans of the socialist states and the consistent practical application of the principles of international socialist division of labor are creating the pre-conditions for an expansion of economic cooperation between the two systems. Broad prospects are being opened up for the development of foreign trade and other economic ties between the socialist and all other countries, regardless of their social and political order. As Comrade A. I. Mikoyan emphasized in his speech to the XXII Congress of the CPSU, "The Soviet Union is for international division of labor not only among the countries of the socialist world system but also among the socialist and all other countries, including the West."

The execution of the seven-year plan for the development of the national economy of the USSR and the national economic plans of the people's democracies are opening up new, truly wonderful prospects for the further expansion of scientific-technological cooperation among the socialist states, which will contribute to a more thorough exposure of all the advantages offered by the socialist world system and will accelerate the economic progress of each socialist country.

The leading role in scientific-technological cooperation among the socialist states pertains to the Soviet Union, which is marching in the van of world technical progress and has achieved outstanding successes in the most varied branches of science and technology. The scientific-technological achievements of the Soviet Union are the property of all the socialist countries and are making it far easier for them to build socialism more rapidly. Between 1947 and 1958, the Soviet Union handed over to the socialist countries about 17 thousand forms of complete technical documentation as scientific-technical assistance. Calculations by Polish and Czech economists indicate that the practical application of Soviet technical documents and the use of the production experience of the USSR has afforded Poland savings of about 1 billion rubles and Czechoslovakia of about 1.2 billion koruna. Along with the utilization by the people's democracies of the scientific-technical achievements of the USSR, their mutual cooperation and reciprocal exchange of experience is of tremendous importance for the development of the socialist world system.

The construction of the material-technological base of socialism and communism presupposes a further development and intensification of diversified scientific-technical

cooperation among the socialist countries, a pooling of the efforts of the scientists of these countries and a coordination of activities in science and engineering for the most rapid possible accomplishment of the most important national economic goals.

The formation and development of the socialist world economic system, the intensification of international socialist division of labor and the deploying of extensive economic and scientific-technical cooperation among the socialist countries are creating exceptionally favorable conditions for an acceleration of the development of the socialist economy. The exploitation of the advantages of international socialist division of labor is vastly important for shortening the time needed for the victory of socialism in the economic contest with capitalism and for the accomplishment within a short period of time of the paramount economic goal of the entire socialist camp — to overtake and surpass the most highly developed capitalist countries in per capita production. This goal is now being achieved not only by the Soviet Union, but by the other socialist countries as well.

"The workers of the socialist countries are confident," said Comrade Khrushchev, "that, in the peaceful contest with capitalism, the victory will be with socialism. The socialist countries have long since left the leading countries behind in respect of rate of industrial growth. They have all they need at hand to overtake and surpass the most highly developed capitalist countries economically, too, in per capita production. This goal will be reached much sooner if economic cooperation among the socialist countries is strengthened and perfected through the judicious allocation of tasks, the cooperativization of production and the coordination of their national economic development plans."

When the seven-year plan has been fulfilled, the Soviet Union will have surpassed the present-day output level of per capita industrial production in England and Germany and will have moved to first place in Europe. In 1965, the country will exceed the present-day absolute output volume of the USA in some of the most important industrial products and will approach it in respect of others, and will exceed the present-day per capita and absolute production of farm products in the USA. After the seven-year plan has been fulfilled, the Soviet Union will need five more years in which to overtake and surpass the USA in industrial production. By this time, and perhaps even sooner, the Soviet Union will move into first place in the world in both absolute

and per capita production. This will mean that the Soviet Union has become the country with the highest standard of living in the world.

At the present time, not only the Soviet Union, but the other socialist countries as well are faced with the problem of gaining time in the economic contest with capitalism. In 1957 the Chinese People's Republic set itself a historic goal: to overtake and surpass England within the next fifteen years in output volume of chief industrial products. The gains registered in the development of the economy of the CPR indicate that this goal will be achieved considerably sooner than planned. In 1958 China ranked seventh in the world among steel producing countries, and third in respect of coal production. In 1959 China will closely approach, or even surpass, England in the production of iron, steel, copper, aluminum, machine tools and power equipment. The headlong growth of farm production in the country will in the next few years make it possible to provide enough grain for food, fodder, industrial purposes and the accumulation of needed reserves. The time is not far off when China will overtake the leading countries in the production and per capita consumption of meat, fats, sugar and cotton fabrics.

"The general line of the Party, which is straining every effort and striving forward to build socialism on the principle of more, faster, better and more economically," wrote Jen Min Jih Pao in an editorial, "is the concentrated embodiment of the passionate striving of our people for a speedy deliverance from economic and cultural backwardness, and also an expression of the intrepid spirit and irrepressible might of our people. Our Party is profoundly confident that, if we can only succeed in setting six hundred million people in motion, straining every effort, then we will doubtlessly be able to carry out construction, we will doubtlessly be able to overtake all the capitalist countries in a relatively short time and thereby to transform our country into one of the most advanced, richest and mightiest powers in the world."

Considerable gains have also been achieved in their advance towards the chief economic goal by the other socialist countries. Per capita output of the chief industrial products has risen enormously in the European socialist countries, which will enable them to overtake the most highly developed capitalist countries within a short period of time.

Growth of Per Capita Production in the European People's Democracies in 1958 as Compared With the Prewar Period (in percentages)

	Poland	Czechoslovakia	GDR*	Hungary	Rumania	Bulgaria	Albania
Electric Power	785	511	216	430	472	933	1,670
Coal	313	251	194	200	225	468	4,800
Steel	456	257	223	235	283	— **	— **
Cement	461	347	190	356	458	336	610
Cotton Fabrics	680***	114	151****	—	—	404	4,865

* 1957

** No steel was produced in the prewar years.

*** Artificial and synthetic fabrics.

**** Fabrics of all types.

The November (1958) Plenum of the CC CzCP noted that "all conditions" are present in Czechoslovakia "to achieve an absolute superiority for socialism over capitalism in the world contest, and to overtake the most highly developed capitalist countries within a very short period of time in

both per capita production and per capita consumption."

Czechoslovakia currently ranks third or fourth among the world per capita producers of coal; it ranks equal with the economically most highly developed capitalist countries of Western Europe in the production of metal-working lathes

and forge-press equipment, and has overtaken them in the production of steam and hydraulic turbines. Czechoslovakia has long since passed Italy and France in the per capita production of electric power and England, France, Italy, Japan and Sweden in the per capita production of steel. By 1965, Czechoslovakia will have exceeded the levels attained at the present time not only in England and West Germany, but also in the USA in the per capita production of coal, iron, steel, cement and other products.

The Polish People's Republic has substantially overtaken Italy in the per capita production of important industrial products, and will approach the level of France within the next few years.

The German Democratic Republic has made considerable gains in increasing the per capita production of several important industrial goods. The GDR is one of the world's foremost per capita producers of electric power, ranking before England, West Germany, France and Italy. The GDR is surpassing West Germany in per capita production of coal, potash, soda ash and caustic soda, motorcycles, bicycles and cellulose.

A resolution of the Vth Congress of the SED [Sozialistische Einheitspartei Deutschlands — Socialist Unity Party of Germany — Transl.] notes that the chief task of the GDR is to achieve such a rate of national economic development within a few years as will enable it to overtake and surpass West Germany in consumption of the most important foodstuffs and consumer goods. The Congress of the SED remarked that the GDR has now surpassed West Germany in the per capita consumption of almost all types of foodstuffs. By 1961-1962, the GDR will overtake or surpass West Germany in the per capita production of the chief industrial consumer goods.

The Bulgarian People's Republic has surpassed by far the economic development of its neighbors — Turkey and Greece — although, prior to World War II, its productive forces were at the same level of development as theirs.

Tentative calculations indicate that total per capita production in all the European people's democracies taken to-

gether will consist in 1965 of the following: electric power — about 1,600-1,700 kilowatts, coal — over 5,500 kg. and steel — 275-300 kg. We may point out for purposes of comparison that the corresponding 1957 per capita production figures for six West European countries (France, Italy, Belgium, Switzerland, Austria and Greece) taken together were: electric power — 1,180 kilowatts, coal — 800 kg. and steel — 256 kg.

Per capita production output is also rising sharply in the Asian people's democracies. The KPDR, for example, in 1959 will overtake and surpass Japan in the per capita production of electric power, coal, iron, cement, fishery products and a few other classes of goods.

The socialist world camp possesses truly unlimited possibilities for the development of the productive forces of its member countries. The law of planned, proportional development, operative in the socialist world system, enables formerly economically backward nations, relying on the experience of the other socialist countries, on cooperation and mutual assistance, rapidly to raise their economic and cultural standards. In this manner, the general line of economic and cultural development of all the socialist countries gradually evens itself out as the backward ones catch up. This is attested to by figures on the growing importance of industry as a producer of national income and national product, on the considerably changed ratio of production of means of production to production of consumer goods, on the changing branch composition of industry in the socialist countries, etc. Thus, as a result of socialist industrialization, the relative importance of industry in the combined gross output of industry and agriculture increased in China from 30% in 1949 to 56.5% in 1957, in Bulgaria from 24.8% in 1939 to 68.3% in 1957, in Albania from 9.8% in 1938 to 48.9% in 1957, etc. The relative importance of production of means of production in gross industrial output increased over the prewar level by roughly two times in China, Bulgaria and Albania, by almost 35% in Hungary and Rumania, and by 13% in Czechoslovakia.

Per Capita Production Level Ratios Between Individual Socialist States

	Bulgaria and Czechoslovakia		Bulgaria and GDR		Rumania and GDR		Albania and Czechoslovakia	
	Prewar	1957	Prewar	1957	Prewar	1957	Prewar	1957
Electric Power	1:6.8	1:3.8	1:20.6	1:5.4	1:12	1:6	1:47.5	1:15.4
Coal	1:6.8	1:3.5	1:17.8	1:7.8	1:40	1:31	1:667	1:31
Steel	— *	—	— *	—	1:4.0	1:3.4	— *	—
Cement	1:2.4	1:2.4	1:2.9	1:1.7	1:3.2	1:1.5	1:10	1:5.8
Cotton Fabrics	1:4.8	1:1.4	1:3.2	1:1.4	1:2.2	1:2.2	1:8.7	1:5.4
Sugar	1:11.6	1:3.9	—	—	—	—	—	—

* No steel produced.

The figures presented characterize the shrinking gaps between individual socialist countries in the per capita production of chief industrial products. An analysis of the statistical material shows that this gap is being rapidly bridged between Bulgaria, Rumania and Albania, on the one hand, Czechoslovakia and the GDR on the other.

It can be seen from the table that before the war Bulgaria lagged behind Czechoslovakia and the GDR in per capita production: of electric power — 6.8 and 20.6 times respectively, of coal — 6.8 and 17.8 times, of cement — 2.4 and 2.9 times. In 1957 Bulgaria lagged behind Czechoslovakia 3.8 times

and the GDR 5.4 times in electric power output, in coal production — 3.5 and 7.8 times respectively, etc. Hence, the analysis shows that Bulgaria has reduced Czechoslovakia's lead in per capita electric power and coal production by almost half, and in cotton fabrics by 3.5 times, etc. The lag of Rumania behind the GDR and of Albania behind Czechoslovakia in output of the most important industrial products is being rapidly narrowed. In all the socialist countries the standard of living of the workers is rising. It is fundamentally characteristic of the economic development of the socialist countries that the system of socialism

becomes ever more closely united and is rendered increasingly strong with each advance in the headlong growth of the productive forces.

As Comrade Khrushchev remarked in his speech to the IXth All-German workers' conference in Leipzig on March 7, 1959, the future development of the socialist countries will, in all probability, proceed along the line of the strengthening of the unified socialist world economic system. The economic barriers that separated these countries under capitalism will be removed one by one. The common economic base of world socialism will be strengthened. This progress will be considerably accelerated by the evening out of the general level of economic and cultural development of the socialist countries. The higher the standard of living of all free peoples, the more fully the material and spiritual needs of people are satisfied, the more rapidly and easily will survivals of capitalism be erased from the consciousness of people, the more

successfully will be the process of the merging of all peoples into a unified communist family. The pre-conditions for the transition from the first phase of communism to the second phase will be created at high speed in the socialist countries. Successfully exploiting the potentialities inherent in the socialist order, the countries of socialism will move into the higher phase of the communist society more or less simultaneously.

Notes

(1) "Chenlima" — a legendary horse which could run 1,000 li in a day.

(2) Industrial commodities of other than agricultural origin.

NOTES AND CORRESPONDENCE

. Kalinin:

Some Questions of Drawing Collective Farm-Cooperative Property Closer to Property Belonging to the Whole People

The decisions of the 21st Congress of the CPSU provide a majestic program for the further development of socialist society. Our country has entered a new historical period in its development, a period of transition from socialism to communism.

The transition to communism has been prepared by great successes in the development of socialist society, successes achieved in the preceding period in all areas of the economic and cultural life of the Soviet people. Now that the material-technical base of socialism has been strengthened as a result of the heroic labor of the Soviet people led by the Communist Party, and socialist production relations have long been exercising complete sway in both the city and countryside, a new historical task of world-wide significance has arisen — the building of communism.

Communism grows out of socialism and is its direct continuation. The transition from the socialist stage of development of society to the higher phase, communism, is a regularity of the historical process prepared by the whole process of development of human society, a process which cannot be turned back, violated, or avoided. The period of transition to communism is a period of rapid development of modern industry, large scale mechanized agriculture and the whole economy and culture with the active and conscious participation of the whole people, the creator and builder of the new society.

The development of socialist society on the path to communism has posed for our country a number of important theoretical and practical tasks in the sphere of economics. The most important of these are: a new, powerful expansion of socialist productive forces, the creation of a material-technical base for a communist society, and an improvement in the distribution among all members of society of the material and spiritual goods produced by society. In this connection distribution is not the determining factor but is the derivative of the development of society; its forms and principles depend on the mode of production and on the quantity of goods produced.

These practical tasks are also of great importance in solving the question of developing and drawing together the collective farm form of property and socialist property belonging to the whole people. The 21st Congress of the CPSU emphasized that the collective farm structure has all the possibilities for further development and that this is a necessary element in the development of the whole socialist society in the transition period from socialism to communism. This showed the insolvency of the views that the collective farm structure had exhausted its possibilities or that its development was proceeding along some particular path, distinct from that of the whole economy, because of natural and other such peculiarities of production, that the differences between the two forms of property are not the consequence of the level of development of productive forces and collective farm property but arise from the

nature of agricultural production itself. The theory and practice of communist construction show that there are no insuperable differences between city and country, between state and collective farm forms of property, between cooperative property in industry and in agriculture, and that all forms of socialist property are steadily drawing together and in the future must merge into a single form of property. In accord with this all elements of production relations in collective farms are developing and will continue to develop in content as well as in form towards approximating the corresponding elements in state property belonging to the whole people. Here the historically inevitable merging of the collective farm cooperative form of property with property belonging to the whole people will occur on the basis of their further development with the help of an increase in the level of socialization of collective farm cooperative property with the support of the socialist state. On the basis of a further development of the productive forces of the city and country the level of socialization of collective farm production will be raised, the drawing together of collective farm property and property belonging to the whole people will be strengthened, the boundaries between them will be steadily eliminated. The following facts testify to the existence of this process.

First, there is a steady growth in the indivisible funds of collective farms which constitutes the economic basis for the further development of collective farm production and the gradual drawing together of collective farm cooperative property and property belonging to the whole people. On the basis of a growth in indivisible funds there is an increase in the fixed capital of collective farms, an improvement which predetermines the development of social organization of labor in collective farms in forms which approach the organization of this labor in enterprises which are state property belonging to the whole people.

Secondly, the social production of collective farms is including more fully one after another of the branches of agriculture. Correspondingly, the labor of collective farmers will be more and more freed from the low-yield personal subsidiary plots and utilized in the social economy. This, as well as a growth in equipping collective farms with modern implements of production, will lead to a steady upswing in the productivity of social labor, to the organization of collective farm labor approaching more and more closely the organization of labor in state enterprises.

Thirdly, inter-farm production ties and various forms of cooperation between collective farms are developing more widely and inevitably will grow. Joint construction of electric power stations, irrigation systems, enterprises for processing agricultural products, the organization of large-scale, economically effective repair bases, specialization in the production of means of production for the collective farm economy (for example, seeding operations) based on inter-farm division of labor, concentration and centralization of production on the basis of voluntary combination result in and will continue to result in a further enlargement of collective farm production, to the lessening of seasonality in the utilization of labor power, and to an increase in labor productivity.

Fourthly, in connection with the development of electrification, mechanization and automatization of agricultural production there will increasingly occur a particular type

of merging and combination of collective farm means of production with state means of production belonging to the whole people. Agricultural labor will gradually be transformed into a variety of industrial labor and its forms will more and more approach the corresponding forms in state enterprises belonging to the whole people.

Consequently, the merging of collective farm cooperative property with state property into a single property belonging to the whole people is also a solution to the problem of overcoming the existing difference between city and country. This difference must be overcome in production as well as in the distribution of the product created by the toilers of city and country. This process has as its basis an internal unity of the two forms of property and the corresponding production relations, despite substantial differences between them.

The mistake of some economists and practical workers was that, not recognizing the perspectives of development of the collective farm structure and the perspectives of merging the collective farm cooperative form of property with property belonging to the whole people, they accepted the specific forms of organization of labor, production and distribution in collective farms which are characteristic of a definite stage of development of the collective farm structure as unchanging forms characteristic of collective farm production in general. Some of them seek the basis of such specific forms not in the degree of development of productive forces and productive relations in collective farms, not in the level of economic development of the latter, but in the peculiarities of agricultural production: its dependence on the natural cycle of reproduction and the sharp seasonality stemming from this, dependence on natural phenomena, etc. These economists disregard the fact that such peculiarities of agricultural production do not and cannot determine the specific peculiarities of production relations in collective farms as compared to the state sector belonging to the whole people. After all, they exist not only in certain branches of industry (for example, the dependence of production on natural factors in the extractive industry, hydroelectric power, etc.) but they are also wholly characteristic of the state farm sector of agriculture which in no way contradicts the ownership of these agricultural enterprises belonging to the whole people. Along with this it must be emphasized that the forms of production and distribution in state farms are of the same type as the corresponding forms in industry. Forgetting the fact of the gradual transformation of agricultural labor into a variety of industrial labor leads to a mistaken understanding of the essence of the phenomena found in collective farms, to their canonization as permanent, which inevitably leads in turn to an incorrect definition of the perspectives for their development in the future.

It is evident, for example, that the drawing together of collective farm property with the property of the whole people is also proceeding in the forms of payment for the labor of collective farmers. This has been reflected in the increasing transition by collective farms to guaranteed money payment for the labor of collective farmers, which is undoubtedly the beginning of a transition to wages within the limits of the collective farm sector. This process has clearly showed that the workday form of payment for the labor of collective farmers is characteristic only of a certain stage in the development of the collective farm structure and is not a general form of distribution in collective farms. Meanwhile, we know that some economists have tried to connect the workday with the peculiarities of agricultural production (unevenness in money receipts connected with the seasonality of production and so on).

The drawing together of collective farm property with property belonging to the whole people is expressed, in particular, in the process of the transformation of collective farms into complete cost accounting enterprises. A decisive role in this process has been played by the reorganization of the MTS and the sale of machinery to collective farms, which ended the presence of two bosses in collective farm production and concentrated all basic means of production in the hands of collective farms. Along with this the introduction of a new procedure in the planning and purchases of agricultural products, as well as new prices for them, has increased the marketability of collective farm production, has strengthened the material interest of collective farmers in receiving the monetary part of the payment for their labor in the social economy of collective farms, and has led to a further denaturalization of collective farm production. The transition which has been observed in this connection from utilizing the workday for the payment of labor to monetary payment in the form of wages not only draws both forms of socialist property closer together in the sphere of distribution of the necessary product, but also creates the possibilities for the introduction and development of complete cost accounting in collective farms, of the same kind that is used in state agricultural enterprises. Because of this the corresponding economic indices and categories of collective farm production will draw constantly closer both in essence and in form to the corresponding indices of state farm production.

In connection with the above it is also necessary to examine questions of the method of calculating the various cost accounting indices, in particular the index of prime costs of collective farm production. The discussion which has taken place in our press on questions of calculating prime costs of collective farm output has yielded some valuable recommendations accepted by agrarian theory and practice which have been supported by the overwhelming majority of economists. Matters are more complex on the question of evaluating the workday.

As we know, the views of the participants of the discussion differed on this question. Some of the participants in the discussion proposed that prime costs of collective farm output be calculated by using the standardized estimate of the labor of collective farmers, that is, valuing the payment for the labor of collective farmers as the average payment for labor of state farm workers and assigning the difference between the average labor payment level of state farm workers and the actual labor payment level of collective farmers to profits or losses of the collective farm. Others proposed that in calculating prime costs of collective farm production the whole payment for the labor of collective farmers be taken into account, that is, the actual payment. As a result of the discussion on this question, the standardized estimate was accepted as the basis of the method of calculating prime costs of production in the recommendation to collective farms by the Ministry of Agriculture and the Central Statistical Administration.

By now all participants in the discussion recognize the usefulness of the standardized method for planning, price formation, etc. Matters are different on the question of utilizing the theoretical principles of this method for intra-farm accounting. Some economists even now hold that intra-farm accounting must be conducted only on the basis of the actual labor payment. Thus, Comrades Bulochnikova and Korochkin assure the reader that "expenditures for the payment of labor of collective farmers must be determined according to the actual disbursement of money and products for a labor day. Only such an accounting makes it possible to obtain a correct picture of the real prime cost of

duction and the profitability of production." In their view, "conducting an artel type of economic unit on the basis of cost accounting conditional norms should not be used."

This point of view, in our opinion, stems from not understanding the perspectives for the development of forms of labor payment in collective farms and correspondingly categories of prime costs, as well as the practice of utilizing the index of actual labor payment in intra-farm accounting.

It should be noted, however, that despite the exceptional significance of this problem in the practice of communist construction there have not been up to now any important works on the essence of distribution under the cooperative form of property. Only this can explain why the economists still consider that a surplus product available for distribution among the members of a cooperative is created in the cooperative enterprise. In essence it is this particular point of view that lies at the basis of the position that the actual payment for labor in collective farms is fully an element of the costs of production. Even differential rent is declared to be an element of this cost of production, and not only its second component obtained through additional expenditures of labor and resources (and part of these are produced by the state) but also the first — depending on fertility and location.

However, the practice of socialist construction long ago answered this question. The largest part of the first category of differential rent, as we know, is extracted from collective farms by the state in the form of surplus product and not as a deduction from the necessary product. Insofar as its smaller part is concerned its transmission to collective farms makes sense only for stimulating the most rapid possible development of one or another branch needed by the state in the most favorable regional circumstances with a minimum expenditures of labor and resources per unit of output. However, it is obvious that even in this case this part of differential rent (differential income) must be viewed as profit or additional income and not as necessary product.

It must be noted that economists who identify the actual payment with the social one within the framework of cooperative property in essence view collective farms not as an organic component part of the socialist system of agriculture and the economy as a whole but as some kind of economic structure existing by itself outside of socialist society. However, collective farm property is only a part of socialist property.

We know, for example, that socialist expanded reproduction is secured by the social realization of the total surplus product created in all branches of the national economy. However, according to the logic of such authors it appears that since there is no surplus product in cooperative enterprises (because theoretically the whole product created in cooperative enterprise may be distributed among the members of the artel) the source of the product extracted for social funds can only be the necessary product. But this completely contradicts the principle of distribution according to work under socialism.

Further, we know that collective farms and the collective form of property in the framework of the socialist system of agriculture exist not alone but together with state farms, the leading form of socialist economy in the countryside, organized on the basis of state property in means of production belonging to the whole people. We also know that these two forms of property in the future will draw closer together in the level and form of payment for labor.

This poses an important question for Soviet science:

which particular payment for labor must be placed at the basis of the standardized level of payment for the labor of collective farmers as the average social valuation of their labor in any given concrete conditions — the average payment for the labor of state farm workers, the average payment for the labor of state farm workers and collective farmers, the average payment for the labor of collective workers, or finally, the average payment for the labor of workers in the industry of the given region? But it is obvious that in all cases the valuation of the payment for the labor of collective farmers must be closely connected with the payment for the labor of workers in state farms and industrial enterprises. This is not only of great theoretical but also of practical importance both in the light of the future drawing together of the two forms of property as well as for current practice. One should not, for example, ignore the fact that in some regions too great an excess in the wages of state farm (or industrial) workers over the labor payments to collective farmers may and does lead to a transfer of labor power from collective farms to state farms that is not called for by the needs of the national economy, to a weakening of such collective farms and thus to a decline in the social productivity of labor. Besides, we must remember that the latter may also occur in the opposite situation — when the payment for the labor of collective farmers considerably exceeds the payment for the labor of state farm (and even of industrial) workers, something that is characteristic of several regions with a high average labor payment in collective farms. Here, state farms experience a shortage of labor power which leads to additional state expenditures for the payment of labor while an excess of labor power in such collective farms results in its under-utilization. This in no way affects the interests of collective farmers because they apply their labor power to their private plots which in these regions, given the identical size of land area for different zones permitted by the Agricultural Artel Statute, makes it possible to receive much higher incomes than those in other regions through the cultivation of intensive crops under better natural conditions. As a result, these incomes may even compete with a very high labor payment in the social economy. (2)

The same problem arises in the relationship between the payment for labor in the city and the country. Hence, the valuation of the labor of collective farmers is not only a purely accounting question but is one of the major tools of economic policy which is already now of great significance in the period of building communism. It is evident that no matter how the forms of labor payment change (and these changes undoubtedly will proceed along the lines of drawing closer together the two forms of property) the necessity for a division of the actual payment for the labor of collective farmers into two parts will be retained: an economically necessary labor payment whose upper limit will be the average wages of state farm or industrial workers depending on concrete circumstances, and a supplementary income (or profit), paid to collective farmers through a redistribution of the surplus product remaining in the collective farm. This, in our view, will permit the maintenance of the most effective relationships, from the point of view of the whole national economy, between the labor payments for collective farmers and state farm workers, toilers in the cities and in the countryside. This will also make it possible to eliminate in the future the unjustifiably sharp differentials between the labor payments of different collective farms and regions of the country.

How, in this case, are we to explain the fact that some collective farms are now trying to introduce intra-farm accounting on the basis of a calculation of actual labor day payments? This is explained by many factors. The

fundamental one is the complexity of accounting and a substantial amount of additional computing work connected with the calculation of several indices which thus far in the early period of development of cost accounting in collective farms have hardly any practical significance and lead only to additional expenditures of labor and resources. It is obvious, for example, that in this period the principal task is first of all the comparison of expenditures in various sectors of production of the specific economic unit, and this is fully realizable by using the index of actual labor payment. In these circumstances the task of comparing indices of work in these sectors with the indices of corresponding sectors in leading collective and state farms found in identical natural-economic conditions is rather removed and can be realized only in the future with the accumulation of experience in cost accounting in such collective farms and its further development and improvement. It must be particularly emphasized that in most collective farms the level of payment for labor is still below the level of payment of state farm workers, as a result of which the economic problem of calculating supplementary income or profit does not arise here and the calculation of losses in this situation has no relationship to the actual distribution of incomes and appears to collective farmers as an operation devoid of any meaning.

However, the need to use the standardized method for intra-farm cost accounting exists even now in the economically strong collective farms where the level of payments per labor day already exceeds the payment level for state farm workers. In such collective farms it is already necessary to establish a guaranteed payment for labor at the same level as the wages of state farm workers (or, depending on concrete conditions, at the same level as the average payment for industrial workers in the given region and so on) and this must be placed at the basis of planned cost accounting indices and norms while the remaining part of income should be distributed through a special fund (supplementary income or profit) for additional material rewards for brigades and individual collective farmers achieving above-plan yields, economies of resources, etc.

Comrades Bulochnikova and Korochkin do not notice this process of the development of the actual payment for labor into the standardized one. As a result, they incorrectly explain the nature of the very indices they present. It is easy to see that even for average collective farms the cost accounting tasks which they present are not the actual but the planned indices, at the basis of which lies the planned level of payment for labor which is derived not only from expected incomes of the collective farm in the current year but also from the transitory fund for the payment of labor. And this means that the labor payment lying at the basis of cost accounting indices is not the actual payment but, in essence, the standardized one with this role being filled by the planned payment for labor. With the future approximation of the planned level of labor payment to its social norm there will occur a full correspondence of this conditional-factual (or, more exactly, planned-standardized) labor payment with the standardized one.

Insofar as the given economic unit is concerned, the authors somehow forgot that the estimates which they present of prime costs, net income and other economic indices of collective farm production in the Stalin collective farm were obtained by valuing the labor at 8 rubles and not according to the actual payment of money and products for workdays. The Stalin collective farm in Ryazan oblast happens to be a strong economic unit and has long been known as a leading collective farm which as long ago in 1954 began to calculate prime costs of production by

valuing the labor of collective farmers at the same level as the payments for the labor of neighboring state farm workers. This level corresponds to the valuation of the labor day at 8 rubles.

The actual amount of money and products paid out per labor day in this collective farm is considerably more than 8 rubles. For example, average payments per labor day were 8 rubles, 79 kopecks in 1954, 15 rubles, 94 kopecks in 1955, and 16 rubles according to the 1956 plan. Hence the prime costs of production, calculated by valuing the labor of collective farmers according to actual payments per workday in the Stalin collective farm is considerably higher than the prime costs presented by the authors. Thus, the authors of the article, without realizing it, have given an illustration drawn from the example of the Stalin collective farm of valuing the labor of collective farmers in introducing intra-farm accounting at the same level as the labor payment to state farm workers and not according to the actual payment of money and products per workday. This refutes their theoretical position.

With a further upswing in the collective farm economy and the level of labor payment, as well as with the increasing transition from the use of the workday to guaranteed money payment for labor, the process of transition to using the index of average social payment for labor in determining the level of prime costs will appear in an increasingly pure form. The same will occur in regard to the need to divide the collective farm product into one part received as distribution according to the amount of labor and representing the necessary product in the form of money wages which constitute the basis for cost accounting planning determining the level of prime costs of collective farm production, and the surplus product redistributed as supplementary income (profits) through a special fund for additional rewarding of workers. These labor payments, the system of cost accounting and the method of calculating prime costs in collective and state farms on the one hand, and in industry and agriculture on the other, will increasingly draw closer together both in content as well as in form. In this process labor payments in collective farms will increasingly approach state farm and industrial wages both in form as well as in essence, while supplementary income will approach the monetary supplementary income just as this occurred in cooperative industrial enterprises. In the final analysis this as well as other factors will promote the complete merging of the two forms of property in agriculture and the elimination of existing differences between city and country.

Notes

(1) Problems of Economics, 1959, No. 3, pp. 136-137 (Our emphasis — L. K.).

(2) We note, in passing, that the Agricultural Artel Statute, in our view, should be revised in this regard. A differentiation in the size of private plots by zones in accord with the level of their incomes is needed to ensure even now the maximum participation of collective farmers in the social economy. It is obvious, for example, that the income yield of strips identical in area which are used for gardens and vineyards is much higher than in the northern zone where plots may be used in the near future basically for only potatoes and vegetables (except in suburban areas).

Gerasimov:

The Seven-Year Plan and the Study of the Productive Forces of the USSR

One of the major directions of scientific-research work in the over-all plan of the Academy of Sciences of the USSR is the study of the complex of natural resources and the elaboration of the scientific principles of the many-sided development of the productive forces of the individual regions of the USSR. The basic research in this area is being conducted by the Council for the Study of Productive Forces (COPF) of the Academy of Sciences of the USSR. Its work plan provides for laying the scientific foundations for proposals to master natural resources on the basis of their comparative technical-economic evaluation and for revealing the perspectives for the development of new production sites (junctions) and determining their role in interregional and interbranch economic ties.

The COPF of the Academy of Sciences of the USSR conducts its research on the basis of extensive coordination and close ties with the sections, institutes, laboratories, commissions and branches of the Academy of Sciences of the USSR, the academies of sciences of the union republics, and constant cooperation with the scientific-research and planning institutes of ministries and departments, economic councils and local planning and economic organizations. The COPF agrees with Gosplan of the USSR and the CPSU on its project plans of scientific-research work. In accordance with these plans, many-sided studies were carried out in 1958 connected with providing the foundation for the construction of new metallurgical bases, with studying mineral raw material, energy, and natural resources of the national economy of the USSR, with working out problems of the regional division of fuel consumption in the USSR, with investigating the natural resources and the perspectives for development of the natural resources of Priamur, the Far Eastern USSR, the Krasnoyarsk territory, Zabaikal and the regions of the Great Turgai (Northern Kazakhstan). Some of these studies are of great importance in determining the principal direction in the development of the productive forces of the country in the forthcoming seven-year period as well as in the more distant future.

As we know, the 21st Congress of the CPSU provided in the seven-year plan for a considerable increase in the production of ferrous metal to meet the national economy's requirements more fully. Particular attention must be paid to the development of ferrous metallurgy in the eastern regions of the USSR on the basis of deposits opened up in recent years in Siberia and Kazakhstan.

An important place in the work of the group of scientific workers of the COPF has been given to a comparative study of two of the most promising variants for the creation of a new coal-metallurgical base: in Southern Yakutia on the basis of the Aldansk iron ore deposits and in Chita on the basis of the Priargunsk (by using coal from the South Yakutsk coal basin). In the course of the investigation the most important technical-economic indices were determined, new sources of flux material were

considered, the characteristics of the natural conditions assumed at construction sites, perspectives for water supply, the creation of local agricultural bases and securing labor resources were more precisely defined.

The consumption of ferrous metals in the regions east of Lake Baikal will increase substantially by 1970. In order to avoid large unproductive expenditures for distant shipments of metal it is necessary here to create large-scale metallurgical production. In this connection, the alternatives of locating a metallurgical plant in the village of Chulman and in the cities of Nerchinsk and Svobodno were examined.

The calculations performed by the COPF show that the lowest prime costs of pig iron would be at the Chulman plant. Its level would be close to the prime cost indices at the Taishetsk, Western Siberian and Barnaul plants planned for construction during the period 1959-1965.

By utilizing coke obtained only from Neriungriinsk coal the prime cost of Chulman pig iron will be 15-16% below that of Taishetsk.

The scientific research work for laying the technical-economic foundation for developing ferrous metallurgy in the regions east of Lake Baikal has been basically completed and a collective study devoted to this problem is now appearing. A monograph prepared by a group of writers, "Iron Ores of Southern Yakutia, Their Material Content, Genesis, and Industrial Importance," is also being issued.

As a result of the investigations of the COPF it has been established that prior to the construction of the metallurgical plant in the regions east of Lake Baikal the Taishetsk metallurgical plant can be a consumer of southern Yakutsk coal. The replacement of Kuznetsk coal by Southern Yakutsk and Irkutsk coal will make it possible to begin more quickly the utilization of the local fuel base for the production of coke at the Taishetsk metallurgical plant and to develop a fuel base for ferrous metallurgy in Eastern Siberia.

In 1958 a great deal of work was also done to determine the suitability of creating a large-scale metallurgical plant in the Krasnoyarsk territory on the basis of the ore of the Angaro-Pitsk iron ore basin and the coal of the Kuznetsk basin. According to the estimates of the COPF the prime cost of pig iron at this plant would be less than at Taishetsk. A study of the Angaro-Pitsk deposits for the purpose of determining more precisely their future value showed that the necessary increase in supplies of iron ore may be secured from the further drilling of already opened areas in depth as well as from the opening-up of new, already known, ore supplies, in particularly those of the Lower Angarsk site.

In connection with the construction of the West Siberian metallurgical plant it appears economically advantageous to use the ores of the Lower Angarsk deposits and not those of the Altai-Saiansk group. This will make it possible to extract more ore and smelt cheap pig iron without lower specific expenditures.

In 1958 the COPF, together with the Ural and Komi branches of the Academy of Sciences conducted a technical-economic analysis of the effectiveness of utilizing Pechorsk coking coal in the metallurgy of the Northern and Central Urals. Metallurgy in the Urals now uses principally Kuznetsk basin coal, requirements for which are

increasingly growing, as a technological fuel. In this connection it is economically advantageous to use the greasy coal (clear as regards sulphur and phosphorus) from the Pechorsk coal basin in the production of coke. A positive decision was also made on the question of the suitability of building the second section of the Lower Tagilsk metallurgical plant in the period 1959-1965.

An important task in the sphere of developing ferrous metallurgy involves an increase in its technical level, in particular through introducing highly effective technological processes. One of these is the electrical smelting of pig iron. An investigation, conducted by the COPF, of the perspectives for its development in the eastern USSR showed that the smelting of pig iron in electric furnaces would be 20-30% cheaper than in blast furnaces operating on coke. It is most suitable to build electro-metallurgical plants based on the Bratsk, Krasnoyarsk and Zeisk hydroelectric power stations. The results of this investigation are being used, in particular, to provide the groundwork for building the Zeisk hydroelectric power station and in planning the electric power balance of the Bratsk hydroelectric power station. The results of this investigation have been elucidated in a monograph, "Perspectives for the Development of Pig Iron Smelting in Electrical Furnaces in the Eastern USSR."

The existence of energy resources and the regional division of fuel consumption in the USSR was another important problem on which the COPF collective worked. A preliminary model of the regional division of coal consumption in 1970-1975 was worked out which showed the perspectives for the widespread introduction of strip mining operations in eastern regions. Technical-economic indices of extraction and transportation of coal in the principal basins and deposit areas were also determined for the future. The high economic value of utilizing Kuznetsk coal by strip mining was demonstrated even in several regions of the European part of the USSR.

On the basis of the work done, there resulted not only a model of the regional division of coal consumption in the USSR but the comparative economic value of different types of fuel in all economic regions of the country and the cheapest type of fuel for each region were determined. The results of the investigation on the economics of enriching coal made it possible to establish a number of factors which increase its economic effectiveness.

Questions of the economics of agriculture are reflected in a number of studies carried out by the COPF collective in the past year. Among them are, for example, materials on a natural-economic regional division and perspectives for the development of agriculture in the USSR. The volume of agricultural production in the USSR as a whole and by separate union republics and natural-economic regions was projected. Recommendations were made for the further mastery of virgin and uncultivated land, for a fundamental improvement in current low-yielding natural hay and pastures, for an expansion in the grain economy and the creation of a firm grain fodder base, an increase in the production of technical crops (cotton, flax fiber, oil bearing crops and others), potatoes, etc. Estimates were also made of the required amount of tractors and agricultural machinery and their regional allocation in accord with natural-economic zones. Data from these and several other investigations are being utilized in planning the development of agriculture in the USSR.

Of the other studies carried out by the COPF we must note the investigation of the natural resources of the northeastern USSR which made it possible to complete in 1958 the elaboration of the hypotheses on the development of the

productive forces of Kamchatka oblast. Particular attention was paid here to questions of the many-sided development of the economy, extending the specialization of the oblast in the social division of labor by using its varied natural wealth. The fullest examination was given to questions of the fishing industry and transportation, development of the economy and culture of the minority peoples of the North, and the problem of the rational utilization of labor resources. The results of the investigations are presented in a collective monograph, "Problems of Development of the Productive Forces of Kamchatka Oblast," which will be released in the near future.

As a result of working out the hypotheses on the development of the national economy of Magadansk oblast during the next 15-20 years a number of important conclusions were arrived at, which come to the following. In the next 10-15 years it is necessary to create here an economically justified production complex, in particular, to complete work on the construction of unified energy systems in the Kolymo-Magadansk and Chukotsk industrial regions on a local fuel base, to develop the metal working industry, the production of consumer goods, building materials and agricultural products.

The COPF worked out the scientific groundwork for the suitability of creating a new large-scale economic-geographic region — the Northeastern USSR.

Important data were obtained from the study of the mineral-raw material resources of Krasnoyarsk territory; here are the largest and most promising areas of magnesite (in Zangar) in the USSR as well as supplies of nepheline syenite (Kuznetsk Alatau) which make it possible to fully supply raw materials for several large-scale enterprises.

In the courses of technical-economic research in 1958, a determination was made of the national economic usefulness and economic effectiveness of creating a second large enterprise in the south Krasnoyarsk territory based on deposits of nepheline syenite of Kuznetsk Alatau, local limestone resources and the Minusinsk coal basin, as a result of which the production of alumina will be closer to enterprises of the aluminum industry. A geological-economic estimate of deposits of non-metallic raw materials for ferrous metallurgy permits the conclusion that metallurgical production in Krasnoyarsk territory can be fully and effectively secured from local supplies of flux limestone, dolomites and other auxiliary raw material. It has been established that the territory contains the largest supply of the best talc in the world.

A technical-economic and national economic evaluation of the Angaro-Pitsk iron ore basin has also been completed. The principal and most economical raw materials base for metallurgical production in Krasnoyarsk territory and Kemerovsk oblast. The construction of a bridge over the Yenisei and the Abalakova-Usovo railroad will make possible the full utilization of this basin, supplies of magnesite, talc, nepheline and other minerals, and will hasten the industrial development of the whole region of the lower part of the Angara river. Problems of the industrial development of the territory are elucidated in the collective studies, "The Natural Wealth and National Economy of the Krasnoyarsk Territory" and "Problems of Industrial Development of the Krasnoyarsk Territory," as well as in the monograph, "The Angara-Yenisei Problem."

Investigations devoted to the perspectives for the development of the leading branches of the national economy of the Zabaikal showed that in the next few years supplies of lead and zinc in the Eastern Zabaikal can be increased to the amounts necessary to secure a considerable growth in

production of lead-zinc concentrates. In connection with the availability in Chita oblast of cheap electric energy based on Kharanorsk coal in the near future, the most progressive technology for non-ferrous metallurgy was proposed — electric smelting of ore, as a result of which capital investments and operating expenditures are substantially reduced. A proposal has been made to create profitable ore mining enterprises in Chita oblast by shifting from underground working of small, vein type deposits which are rich in content to strip mining operation of large-scale deposits of the rod type and for the creation of more powerful enterprises. This will result in a considerable reduction in the costs of extraction and processing of a ton of ore and will substantially cheapen the final product. Proposals were made for an extensive extraction of the useful components contained in the initial ores, including rare and scattered elements. Carrying out these proposals will permit the creation of a large base in the Zabaikal for rare and scattered metals and elements for the production of alloy steel at East Siberian ferrous metallurgy enterprises. It was also demonstrated that thanks to the application of new principles of organization in the polymetallic and rare metal industries, it is possible to achieve the profitable operation of several enterprises in the Zabaikal as well as to transfer many valuable deposits which are currently non-industrial in their basic component to the industrial category.

In 1958 the first basic propositions on the perspectives for the development of a large-scale chemical industry in Chita oblast were worked out. The utilization of Kharanorsk coal and the extremely large Ust-Borzinsk limestone deposits is contemplated and the extensive processing of polymetallic ores (yielding sulphuric acid) as well as oil products is foreseen. In the more distant future the production of phosphate fertilizers, so necessary for the agriculture of the Zabaikal and the Far East, is contemplated.

As a result of economic investigations of the natural resources and perspectives for the development of industry in the Great Turgai region a memorandum was prepared and a brochure was published on the perspectives for the development of the national economy of the Kustanai economic administrative region. These scientific materials are utilized in preparing the plan for the development of the national economy of the USSR for 1959-1965.

Last year the COPF together with the Academy of Sciences of the Kazakh SSR also examined and accepted a more precise summary project plan of scientific-research and planning work for the Great Turgai region for 1959-1965. Institutes of the Academy of Sciences of the Kazakh SSR are working to carry out this plan.

In 1958 the COPF of the Academy of Sciences of the USSR held a number of scientific conferences and meetings. Thus, together with the Siberian department of the Academy of Sciences of the USSR, the State Planning Commission of the USSR and the Council of Ministers of the RSFSR several regional conferences were held in August on the development of the productive forces of the Krasnoyarsk, Yakutsk, Chiryat, Chita, and Yakutsk economic administrative regions and the Tuva autonomous oblast, as well as a conference on the development of the productive forces of Eastern Siberia.

This conference recommended that the rates of capital construction in Eastern Siberia be intensified, and first of all in electric power stations and energy-using units; that the construction of the Krasnoyarsk hydroelectric station be hastened (with the first units being planned for operation in 1965); that work begin on the creation of a Unified Energy

System of the USSR by combining the Unified Energy System of Siberia and the Unified Energy System of the European part of the USSR through the powerful Eastern Siberia-Urals electric transmission system; that geological surveying work in Eastern Siberia be expanded with the objective of uncovering in its territory industrial deposits of oil, fuel gas, phosphate material for sulphuric acid production, high quality bauxite and manganese ore; to begin, in the current seven-year plan, to master the Angaro-Pitsk iron ore basin with its great supplies which are destined to supply ore to the future Second West Siberian Plant; to carry out planning-prospecting work directed towards a fundamental improvement in the transportation network for the new promising regions of Siberia and the Far East; to work out a many-sided project for the mastery of the South Yakutsk coal basin and to build the first coal extraction enterprises at the Chulmansk and Neriunginsk coal deposits, and so on.

In 1958 the international ties of the COPF were strengthened, particularly with the Chinese People's Republic. In connection with the agreement to have Soviet and Chinese organizations conduct joint scientific-research and planning-surveying work in the Amur basin, scientific collaboration was realized between scholars of the Amur many-sided expedition of the COPF and scholars of the Heilungkiang expedition of the Academy of Science of the Chinese People's Republic. In accord with the plan of joint work of the Amur and Heilungkiang expeditions, 97 Soviet specialists worked on the territory of the Chinese People's Republic. 52 Chinese specialists worked on the territory of the USSR. (1) A brigade of Soviet scholars was sent to the Chinese People's Republic to render assistance in the many-sided study of the natural and economic resources of the Tsinghai and Kansu regions.

Representatives of the COPF also participated actively in the activity of international organizations. Thus, corresponding member of the Academy of Sciences of the Belorussian SSR, G. V. Bogomolov, traveled on a UNESCO mission to the countries of the Near East as a scientific consultant. Professor A. I. Silin-Bekchurin was on a scientific mission to countries of Africa and South Eastern Asia (Morocco, Algeria, Tunisia, Egypt, Pakistan, India). Corresponding member of the Academy of Sciences of the USSR, V. A. Kovda and a group of Soviet scholars participated in an international symposium of UNESCO on salted soils and sources of water. At a symposium held in Teheran 14 reports of Soviet scholars and specialists were heard.

The chairman of the Council for the Study of Productive Forces of the Academy of Sciences of the USSR, Academician V. S. Nemchinov, went at the head of a delegation of Soviet scholars to the 31st Session of the International Statistical Institute held in Brussels during September 1-12, 1958. At this session Academician V. S. Nemchinov was elected permanent member of the International Statistical Institute. V. S. Nemchinov was also the leader of a delegation of Soviet scholars-economists who visited France at the end of November and beginning of December, 1958. Deputy chairman of the COPF, corresponding member of the Academy of Sciences of the USSR, L. V. Pustovalov went to Switzerland at the head of a delegation of Soviet geologists to the 5th International Congress of Sedimentology. At this Congress L. V. Pustovalov was elected a member of the Bureau of the International Association of Sedimentology.

The collective of scientific workers of the COPF must solve a number of important tasks in 1959: to prepare an over-all scientific report on the results of the activity of the Krasnoyarsk many-sided expedition and to elaborate measures for the all-round utilization of the natural

resources of the Krasnoyarsk territory and to provide the groundwork for the development of new production-territorial complexes in this extremely promising region of the country. The scientific collective of the COPF must complete all the field work begun by the Amur and Zabaikal many-sided expeditions and begin to formulate conclusions from the scientific-research work and to prepare scientific accounts. It is necessary to assign scientific and scientific-auxiliary cadres to the Kamchatka many-sided expedition which, together with the Council for Expeditionary Investigations of the Siberian department of the Academy of Sciences of the USSR and the participation of the leading institutes of the Academy of Sciences of the USSR, must undertake the necessary field studies in Kamchatka.

In 1959 it is planned that a conference on the development of productive forces in Magadansk oblast will be held and that a great deal of preparatory work will be carried out for the study of the productive forces of Central Asia and the Far East in connection with the forthcoming forces in these important economic-geographical regions of the USSR.

Note

(1) Reports on the activities of the COPF on the Amur problem were published in the 1958, No. 5, and 1959, No. 2, issues of the journal, Problems of Economics.

A. Atadzhanov and B. Feinberg:

In the Institute of Economics of the Academy of Science of the Turkmen SSR

The Institute of Economics of the Academy of Sciences of the Turkmen SSR is directing its scientific-research activity in 1959 in accord with the tasks presented to economic science by the 21st Congress of the CPSU. One of these tasks of primary importance is the establishment of close ties between economic scientific institutes and the planning of the national economy and the whole practice of communist construction. In striving to creatively generalize and theoretically to think through new questions posed by life, the collective of the institute is continuing in 1959 its investigations in the areas of location of productive forces, the economics of industry and agriculture, the history of the national economy of the Turkmen SSR, and the development of economic thought in Turkmenistan.

The development of cotton growing is of great significance for the national economy of the Turkmen SSR. Therefore, the collective of the institute is devoting, as before, a great deal of attention to elaborating the prospects for the development of cotton growing and the cotton industry. This year research begun in 1958 is being conducted on the following problems: "Labor Productivity in the Socialist Agriculture of the Turkmen SSR," "The Productivity of Social Labor, the Means and Reserves for its Further Increase in the Textile Industry of the Turkmen SSR," "The Development of Agriculture in the Turkmen SSR During the Years of Soviet Power," "Changes in the Location of the Light and Food Industries of Turkmenistan During the Years of Soviet Power." In the course of work on these subjects, questions of the future all-round development of the whole national economy of the republic as well as its individual branches are being studied and the major directions in the development of agriculture and industry are being determined.

Investigation of the means and methods of increasing la-

bor productivity in the cotton industry has permitted the scientific collaborators of the institute to uncover production reserves and the effectiveness with which productive capacity is being utilized, and to draw a number of conclusions on the state of organization of labor and wages. The results of this investigation which were of practical significance were sent to the Turkmen economic council by the institute and were published in the press. As an example we may cite the proposal on the reorganization of the work of the Turkmen cotton industry. The author of this proposal has convincingly demonstrated the economic feasibility of organizing the processing of raw cotton directly at collective farms.

In the process of investigating the significance of cost accounting for increasing labor productivity in the sphere of agricultural production the collaborators of the institute worked out a proposal on intra-farm cost accounting and introduced it into one of the agricultural artels of the Kirov region in Ashkhabad oblast. In this collective farm an experimental brigade for all-round mechanization was organized for the purpose of obtaining experimental scientific data on the economics of collective farm production. The brigade carries out all work on the cultivation of raw cotton - beginning with plowing and ending with the harvesting of the raw cotton. The analysis of its production indices made it possible to draw a number of interesting conclusions on the effective means of raising labor productivity in these operations.

Research is now being conducted on such an important problem as increasing labor productivity in livestock raising (after taking zonal location and the specialization of economic branches into account). Last year some results of research in this area were published in the brochure, "Reserves for Increasing the Production of Livestock Products," issued in the Turkmen language.

Altogether in 1958 the Institute of Economics of the Turkmen SSR published scientific works totalling about 40 quires. Among them were: "Cotton Growing in Marysk Oblast in Connection With Mastery of the Area of Construction of the Kara-Kum Canal," "Specialization and Combination of Branches in Collective Farms of Taskauzsk Oblast," "Technical Progress as a Factor in Increasing Labor Productivity in Turkmenistan Cotton Growing." These studies are connected with the problem of increasing the output of agricultural products. The conclusion contained in the published works of the institute will help to project the perspectives for utilizing the land area of the republic, the methods of developing an irrigation system, and the means of increasing output per 100 hectares of agricultural land.

A large monograph by corresponding member of the Academy of Sciences of the Turkmen SSR, A. Annaklychev, "Development of the Industry of Turkmenistan During the Years of Soviet Power (1921-1937)," was also published. It shows the progress of Turkmenistan industry during the years of Soviet power with an important place being accorded to questions of the development of heavy industry and in the first place to the oil and chemical industries. At the same time the author shows the backwardness of the economies of the capitalist states of Iran and Turkey against the background of the great growth in the industry of the Turkmen SSR.

All of the scientific-research work is conducted by the collective of the institute in close cooperation with practical workers in production, agriculture, administration, and the departments of the economic council. Scientific workers frequently visit enterprises and collective farms, actively participate in the everyday work of the scientific-technical council of the economic council of the Turkmen

and in the dissemination of economic knowledge in the press and over the radio.

In the decisions of the 21st Congress of the CPSU particular attention was paid to the further development of the oil, gas, chemical, light and food industries in the Turkmen SSR. In this connection in 1959 the institute is directing its energies towards the solution of problems directly related to the development of these branches in the national economy of the republic. Thus, the plan of scientific-research work of the institute provides for research on the subject of "The Location of the Oil Industry of the Turkmen SSR" as well as for the further elaboration of such important topics as "The Means of Increasing Labor Productivity" and "The Lowering of Prime Costs of Production and the Reduction of the Costs of Circulation in the National Economy of the Republic." A number of recommendations are to be presented for an improved and more effective utilization of new machinery in the oil and gas industries, and on methods of utilizing reserves of growth in labor productivity in cotton growing and livestock raising.

Two field sessions of the learned council of the institute are planned at cotton plants in Marysk and Chardzhousk districts of the republic to discuss the results obtained from research in 1959.

Concrete proposals designed to improve the location of the oil, light, and food industries of the republic will be worked out on the problem of "Principles of Location, Production, Specialization and All-Round Development of the National Economy of the Turkmen SSR."

For the anniversary of the great Turkmen poet and thinker Makhtum-Kuli, a monograph will be issued in 1959 on "Economic Thought in Turkmenistan in the 18th Century" which will elucidate several stages in the development of economic thought in the republic.

Sokolovsky:

What Polish Economists Are Working On

The Institute of Economics of the Polish Academy of Sciences was created more than five years ago. It is now conducting scientific research along three principal directions. The first of these, the most important, is concerned with the major problems of the political economy of socialism and the national economy of Poland; the second is concerned with questions of the political economy of capitalism and the economies of modern capitalist countries. A great deal of attention is being paid to studying the various stages in the history of Polish economic thought and to a critical investigation of current bourgeois economic theories.

The Institute of Economics of the Polish Academy of Sciences encompasses a rather small group of scientific workers. Its attention is concentrated on the basic problem of economic development of people's Poland and the most pressing questions of theory. The workers of the institute specialize primarily in the area of synthetic and generalizing studies.

They attempt to generalize the scientific conclusions arrived at in various monographs and to utilize them in a systematic way for further research and proposals. The questions elucidated in the monographs deal with individual branches of industry and with the subdivisions of material production. The authors generalize theoretically the laws of economic development on the basis of the principles of Marxism-Leninism and at the same time criticize

revisionist and bourgeois tendencies. The need for such a critical approach in investigating problems of the national economy of modern Poland is corroborated, in particular, by the practice of socialist construction in the republic.

The printed works of the institute are intended for a wide circle of both practical as well as scientific workers. They are issued by publishing houses and published in economic periodicals (*Economist*, *State Planning*, and others) as well as in the bulletin, *Studies of the Economic Institute*. In each issue of this publication quite a number of articles are published which are primarily concerned with questions of the political economy of socialism and the economy of people's Poland. The bulletin is issued six times a year. It provides timely information to Polish economic institutions, economic institutes, departments of political economy, national economic planning, economic statistics and branch economics in higher educational institutions on the meaning of the most important events in the economic life of the country from the standpoint of economic science. We believe that this bulletin promotes the close ties of the institute with economic practice and with the departments of many higher educational institutions.

The Institute of Economics also ensures a tie between science practice in other forms. Thus, in 1958 the institute held two scientific conferences in which economic workers of the capital and provinces as well as representatives of economic institutes and departments of higher educational institutions participated. One conference was devoted to the problem of prices and prime costs in the socialist national economy while the second was concerned with the directions and indices of the Polish national economic plan for 1961-1975.

The collective of the institute is striving to closely connect its scientific research with the current tasks of the economy and with the solution of urgent problems of economic policy in the country. This purpose, in particular, is served by some elaborations of the theory of amortization of basic funds, proposals concerned with changing the system of appraising the activity of socialist enterprises and rewarding supervisory personnel, and the determination of coefficients of demand and prices. These studies can be utilized in statistics and economic practice.

One of the chief problems determining the character of the scientific-research activity of the Institute of Economics of the Polish Academy of Sciences is that of the economic effectiveness of capital investments and technical progress. Back in 1954-1955 synthetic indices of effectiveness were worked out which came to be utilized after some modifications in the practical work of the Planning Commissions and several other organizations. This system of indices was discussed at a territorial conference on economic effectiveness of capital investments (March, 1956) and at a conference on the economic effectiveness of capital investments in agriculture (February, 1959). The indices worked out by the institute are applied by theoretical and practical workers as principles in analyzing the effectiveness of capital investments. Recently the institute began to elaborate indices of economic effectiveness of foreign trade.

In the studies of scholars of the Institute of Economics (the works of B. Mints, K. Sokolovsky) several important propositions have been put forward on the basis of the elaborated system of indices of the economic effectiveness of capital investments. They are directed against the position that a rate of interest on capital investments be applied in these accounts. The formula proposed by the institute considers, first, capital investments plus the coefficient of their "freezing" in the period prior to putting

the project into operation plus the prime costs of operating the project and the value of output in period "n," and secondly, production in period "n."

The index and method of investigating the economic effectiveness of capital investments is utilized in the institute in analyzing capital investments in industry, agriculture, and in transportation (for example, in analyzing the feasibility of electrifying certain railroads).

A second basic problem investigated by the institute is that of prices and prime costs in the socialist national economy. This may be considered a central problem since in one way or another it affects all branches of the national economy and is an extremely interesting subject of research for scholars-economists. It is this circumstance which made the institute conduct the above cited conference of scientific and practical workers in March, 1958. The following books were published last year on this problem: "The Theory of Prime Costs and Prices" by B. Mints, "Materials for an Analysis of Price Relationships" by A. Khlebovchik, L. Beskid, and S. Felbur. In the publishing plan for 1959 the following studies are included: "Analysis of the Price System for Agricultural Products," "The Retail Price System in Poland," "The Choice of Prices for an Analysis of the Effectiveness of Investments," and a number of others.

In the speeches at the scientific conference as well as in published works (particularly in B. Mints' book and K. Sokolovsky's monograph on "Agricultural Prices") the workers of the institute took a clear position on the question under study. It amounts to the position that in a socialist economy price formation must be based on average and not on marginal costs of production. From this same point of view questions of production costs in the sugar industry, in cement production and in other branches were elucidated in articles published in the bulletin "Studies of the Economic Institute."

The third problem to which a great deal of attention is devoted in the institute involves questions of labor productivity. The Institute of Economics has investigated them for several years, attempting to show through analysis and comparison of Polish and international data what great reserves of growth there are in industrial, building and agricultural production in the national economy of Poland, where the level of labor productivity cannot yet be viewed as high. In 1957 a book was issued by the author of this article on the method of measuring labor productivity in agriculture. In 1959 it is planned to publish a study on "Experimental Investigations of the Dynamics of Labor Productivity." The determination of the optimum size of the enterprise, which is of considerable importance in planning the volume of work of construction enterprises, is also connected with this problem. The influence of seasonal work on the growth of construction output and the scale of building enterprises is also being studied.

Questions of socialist expanded reproduction constitute the fourth problem. Professor B. Mints' study on "Urgent Problems of Political Economy" as well as a number of monographs are primarily concerned with theoretical investigations of the relationship of the first subdivision (the production of the means of production) to the second subdivision (the production of objects of consumption) as well as the relationship of group "A" to group "B." In the problems of expanded reproduction questions of the balance of the national economy are also included. In the studies of the workers of the institute the method of balances is analyzed and in individual studies a critical evaluation of the "input-output" method of the American economist Leontief is pre-

sented. At the end of 1959 a meeting of economists of socialist countries devoted to questions of expanded reproduction is planned at the institute.

The fifth problem involves urgent questions of demand and supply. Coefficients of demand calculated by the institute are used in economic practice along with indices of the effectiveness of demand. On the basis of studies of the budgets of families of workers, peasants and employees as well as the results of investigations and demographic forecasts, the institute has several times presented scientific analyses of demand and consumptions of industrial as well as food products. This work is of significance in determining economic policy in regard to the city and countryside.

A sixth highly important problem is the preparation of the perspective plan for the development of the national economy of Poland for 1961-1975 as well as the five-year plan for 1961-1965. A scientific conference in November, 1958 at which Professor M. Kaleci presented a report revealed a certain disagreement of views on the possible and feasible rate of development of the Polish national economy in the next fifteen years. Some economists made a number of critical comments on individual parts of the plan and in particular they disagreed with the planned rates of migration from rural localities to cities and the proposed share of employment in agriculture (as a proportion of total employment). There was also criticism of the planned rates of collectivization of agriculture, inadequacy rates of technical progress, low productivity of social labor, exaggeration in the planning of national income, profitability of agricultural output, and so on. As a result of the discussion a desire was expressed to accept the proposed project of the plan as a minimum variant.

Research on the seventh problem is concerned with questions connected with the structure and conjuncture of modern capitalism. A group of scientific workers under the leadership of Professor M. Kaleci critically analyzed the economic situation in the USA, the Federal Republic of Germany, Great Britain and Japan, the Indian five-year plans, tendencies in the development of modern capitalism and so on, and also began investigating problems relating to economically backward countries.

The major problems cited above do not exhaust the subject matter of the scientific-research activity of the Institute of Economics. Its collaborators are systematically working out questions of wages, they are occupied with an analysis and then an evaluation of the Polish economy on an annual basis, and with the study of the history of the development of progressive Polish economic thought in the 19th century. The quarterly bulletin, *Review of Bourgeois Periodicals*, should also be mentioned. Besides bibliographical materials published in scores of economic journals, the bulletin publishes abstracts and sometimes even the full texts of those articles which are of interest to Polish economists or which elucidate in a new way certain questions of political economy (for example, development of the conjuncture of the capitalist economy and so on).

One of the principal methods of scientific work in the institute is the collective approach to the solution of one problem or another. A great deal of attention is paid to the scientific growth of the collaborators. At special weekly seminars the scientific workers of the institute, each in turn, deliver reports on their studies as a whole or in part. Discussions following such reports help to uncover obscurities in the scientific studies and to reject mistaken concepts and evaluations.

OGOL (Continued From Page 39)

ssary to do away with the economically unjustified set-
of the markup on the basis of the raw recipe. It would
ore correct to establish firm markups by types of en-
rises, in kopecks per dish, with allowance for the diffi-
es involved in the preparation of various types of prod-
. Such a system would ease a transition to fixed prices
would create stimuli for more rational utilization of
materials, economy of funds, and correct planning of
menu.

The present article has dealt only with individual problems
involved in the further development and improvement of
public catering. In the course of all-out upbuilding of com-
munist society, the significance of public catering both in
town and village will increase uninterruptedly. This branch
of the national economy will, in future, become a widely-
developed system of organization of the communist type, and
will play the predominant role in satisfying the people's need
for food.

AYEVSKY (Continued From Page 71)Literature Cited

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